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MINIMUM SUPPORT PRICES IN INDIA: AN ECONOMIC AND POLITICAL ASSESSMENT

Swaha Shome and Mala Lalvani

This paper attempts to review the system of announcing Minimum Support Prices (for rice and wheat) from an economic and political perspective to assess its continued relevance. The study finds that Minimum Support Price does not seem to serve its stated objective of enhancing production; it has added to inflationary pressure; distorted cropping pattern in favour of rice and also adversely affected ground water resources. Added to this is the problem that it seems to have favoured a few States like Punjab and Haryana. On the political front, this paper seeks to examine the impact of elections on the support prices as well as on procurement of rice and wheat. We find convincing evidence to vindicate the hypothesis that policy decisions on support prices and procurement are guided by electoral considerations.

1. Introduction

The mechanism of Minimum Support Prices (MSP), initiated in the mid 1960s continues to be an intrinsic part of the management of food supplies in India. MSPs were initiated to provide support to producers on the one hand and for the creation of buffer stocks on the other so as to keep price volatility under check. The assurance of support prices are expected to encourage farmers and induce greater production and procurement. Concurrently, consumers are expected to benefit through larger domestic availability, less volatility in supply which is expected to result in stable prices. The farmers, through the assurance of floor prices, are given the confidence to adopt better technology, use more inputs and thereby improve yields.

Till mid 70s the Government administered two sets of prices - Minimum Support Prices and the Procurement Prices. The Minimum Support Prices were announced before the sowing season and were aimed to be the floor prices and thus acted as an insurance to the farmers especially in situations when the bumper crops caused market prices to fall. The procurement prices were announced before the harvesting season and were normally higher than the MSP and the aim was to

encourage procurement by the official agencies. The MSP was expected to be universal in the country. But the Procurement Price was administered by the Government through the Food Corporation of India (FCI) in markets convenient to the FCI. In fact, there was no *de facto* operation of MSP in the field since FCI had no purchase arrangement in some 'minor' producing states. If the price in the market kept up in such areas despite no purchase by FCI, it was because the purchase by the FCI in the market at higher prices than MSP and its sale at lower price to consumers, kept up demand and both the factors led to keeping market prices high.

This dual system of pricing continued till mid 1970s for paddy but was discontinued for wheat in 1969. With the introduction of High Yielding Varieties (HYV) of seeds during the Green Revolution in 1967-68, and good weather the production of wheat was comfortable between 1968 and 1971. The easy availability of grains ensured sufficient stocks and in 1972, the PL 480 wheat imports were also stopped. Hence, there was no need for a separate procurement price for wheat. However, a poor crop of 1971-72 created the renewed need for increased procurement and procurement prices were reintroduced in 1974-75 for one year [Kahlon and Tyagi, 1989]. However,

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it was realised that the procurement prices were mainly driven by the required size of procurement rather than ensuring price support to the farmers. This caused the Government, on recommendation of the Commission for Agricultural Costs and Prices (CACP), to fix only one set of prices and the dual pricing structure was removed.

Abandonment of the two price system meant that Government gave up price support to prevent prices from going below terms of trade. It fixed a price to purchase for the public distribution system and stock. This was implemented in select markets only in cases of both wheat and rice. This resulted in actual market price in some "minor" producing States going below the Government announced procurement price, since there was no purchase arrangement by the FCI. In effect, the MSP, as originally conceptualised, in keeping with the terms of trade, was abandoned and only a Procurement Price has operated since the middle of the 1970s.

It is also crucial to point out at this juncture that MSP is often thought of only as a support to farmers which prevents the price from falling below the level indicated by the terms of trade. However, the Department of Agriculture, Government of India in its operational guidelines of the price support system states upfront that it is expected to play the dual role of protecting the interests of both producers and consumers. For the producers it would serve as a support price and from the point of view of the consumer, it would serve to encourage higher investment and production in order to keep the product prices under check. The exact words in the guidelines are *"The Government's price policy for agricultural commodities seeks to ensure remunerative prices to the growers for their produce with a view to encourage higher investment and production and to safeguard the interest of consumers by making available supplies at reasonable prices with low cost of intermediation"*. <http://agricoop.nic.in/sites/default/files/pssguidelines.pdf>

This paper attempts to review the system of Minimum Support Price from an economic and political perspective so as to assess its continued relevance. Keeping in mind the stated objectives of MSP, when assessing the economic impact we empirically test for the impact of MSP on (i) production (ii) inflation (iii) distortion in cropping pattern and (iv) ground water depletion. On the political front, we seek to examine the impact of elections on the support prices as well as on the procurement of rice and wheat.

The MSP is declared for more than twenty other commodities such as coarse cereals like barley, jowar, bajra, maize and ragi, pulses like gram, arhar/tur, moong, urad and lentil, Oilseeds like groundnut, rapeseed/mustard, toria, soya bean, sunflower seed, sesame, safflower seed and niger seed as well as non-food items like copra, de-husked coconut, raw cotton, raw jute, sugarcane (Fair and remunerative price), and tobacco (<http://cacp.dacnet.nic.in/ViewContents.aspx?Input=1&PageId=36&KeyId=0>). This paper confines itself to the MSP for rice and wheat only as FCI till recently procured only rice and wheat from the farmers. Procurement of oilseeds and pulses has started only very recently. The bulk of the procurement and economic costs of FCI are from wheat and rice. Sugar is also procured by FCI but since it is governed by a different pricing mechanism, we have concentrated on rice and wheat only.

Section 2 of the paper reviews the relevant literature; Section 3 assesses the trends in MSP of rice and wheat; Section 4 discusses the data and methodological aspects; Section 5 empirically assesses the economic impact of MSP; Section 6 empirically assesses the political dimension of MSP; Section 7 concludes.

2. Issues Related to MSP: A Review of Literature

The primary aim of Minimum Support Price (MSP) was to incentivise farmers to adopt better technology so as to increase availability of grains, increase stocks and adequately support the Public Distribution System [Tyagi, 1990; Acharya, 1999; Connell, Hira and Jahan, 2004]. However, there is a growing concern regarding this objective of support prices not being fulfilled. Many researchers have pointed out that the supply has responded less than proportionately to the changes in support prices [Krishna and Chibber, 1983; Jha and Srinivasan, 1999; Rashid et al., 2005; Mythili, 2006]. Gulati and Sharma [1990] found the supply elasticity in various regions to be less than one but they have emphasised the supportive role of support prices in encouraging production. Ganesh-Kumar et al., [2008], point out that post Green Revolution, MSP does not appear to have had much of an impact on the production since most of the potential land has already been put under cultivation. Dev and Rao [2010] are of the view that MSP did succeed in securing enough grains for the PDS in the eighties when the yield was increasing and the cost of production decreasing. They, however, point out that with support prices, farmers would not be under pressure to use their land more effectively by use of fertilisers and other technological interventions, as the MSP guarantees them a minimum return.

The fact that over twenty crops have been selected for price support, but only rice and wheat have been favoured, has caught the attention of researchers [Deshpande, 2003a; Dev, 2011]. Public procurement at MSP has disproportionately focused on wheat, rice and sugarcane even at the expense of other crops such as pulses and oilseeds [Economic Survey, 2016-17]. In pulses and oilseeds, increases in MSP have not proved as effective with production falling far short of demand. Actual procurement by central agencies

has been low for crops other than rice and wheat. National Agricultural Cooperative Marketing Federation of India Ltd. (NAFED), for example, procured only 3.21% of kharif oilseeds produced in 2014-15 season. In contrast, procurement as a percentage of production for rice and wheat have been 29.9% and 32.38% respectively in the same year. (<https://www.rbi.org.in/scripts/PublicationView.aspx?id=17161>)

The bias of support price in favour of rice and wheat has resulted in a distortion in cropping pattern with subsequent impact on the ground-water depletion. It has been pointed out in several studies that increasing MSP has acted as a deterrent for the shifting out of rice and wheat production from Punjab and Haryana to northern and eastern States, which are more favorable for the production of these crops requiring large quantities of water [Gaiha and Kulkarni, 2005; Chand, 2003]. Also, the focus on rice and wheat has created shortage of oilseeds and pulses in the domestic markets leading to increased imports. Rice and wheat cultivation in Punjab, encouraged by Government's pricing and marketing facilities, is one of the primary reasons for over exploitation of ground water, especially on account of drilling of large number of tubewells [Siddhu et al., 2010; Sasmal, 2016; Ganesh-Kumar et al., 2007].

Another issue with regards to MSP is the regional variation in the impact it has had. Several studies have thus drawn attention to the fact that the impact of MSP has not been uniform across all States. Deshpande and Naika [2002] used data for three regions in Karnataka and showed a negative impact of MSP on area under cultivation of rice and a positive but small impact on area under cultivation of wheat. Deshpande [2003b] has summarised the impact of MSP on eleven major States, which have been divided into groups and the varying impact is observed on the different groups. Ali et al., [2012], who examined the effectiveness of MSP for paddy

across India and specifically in the State of Punjab, found that MSP has been very effective in the States where grains are surplus like Punjab and Andhra Pradesh, but not in the States where there is a deficit.

MSP has often been held responsible for higher wholesale and consumer prices [Gaiha and Kulkarni, 2005]. Chand [2003] found that corresponding to 1% increase in procurement prices, the index of open market prices went up by 0.889%. Ganesh-Kumar et.al., [2008] finds that procurement price acts as a floor to the wholesale price of rice whereas Deshpande and Naika [2002] found that MSP does not bear any consistent relation with wholesale or farm harvest price. According to a RBI [2014], the impact of MSP on inflation is significant but not as high as expected. Bhalla [2014] has blamed increasing MSP for inflation, but has been contradicted by Lahiri [2014] who claims that the causation between inflation and MSP is bidirectional. Ramaswamy et. al., [2014] too support the argument that MSP increases open market prices, which fuels food price inflation. In fact, their computations suggest that optimal setting of MSP could have reduced the by food bill by 33% to 40%.

The influence of political factors in the implementation of MSP is only too well recognised. The bias in favour of rice and wheat in procurement even though procurement prices are announced for several crops and also the fact that procurement and its implementation is helping only a few states are often attributed to political influences [Raghavan, 2004]. While farmers in Punjab benefit from increased MSP as higher MSP leads to higher procurement, farmers in the states like Bihar, UP, MP and Orissa have to go in for distress sales due to the lack of adequate procurement mechanism. World Bank [2005] has shown that benefits which accrued to large farmers as a result of MSP were thirteen times higher than those to marginal farmers in the same

state. Lalvani [1999, Pp. 2676-2681] has examined the impact of elections on MSP growth of both paddy and wheat. The study finds that MSP growth of both wheat and paddy are prone to election time manipulations. Rao [2001] has identified the presence of a wheat lobby along with those for other cash crops like sugar and jute, which pushes prices much above that justified by its costs of production. He too commented on the political economy of agricultural pricing and, in fact, pointed out that the gains of the farm lobby came at the cost of the rural poor.

The role of Government in making the MSP more effective can hardly be overstated. Meenakshi and Banerji [2004] have shown how due to a lack of a government support to the MSP announced by the FCI, the farmers are forced to sell their produce elsewhere. According to the report of the High Level Committee [2015], "the NSSO's (70th round) data for 2012-13 reveals that of all the paddy farmers who reported sale of paddy during July-December 2012, only 13.5 percent farmers sold it to any procurement agency (during January-June 2013, this ratio for paddy farmers is only 10 percent), and in case of wheat farmers (January-June, 2013), only 16.2 percent farmers sold to any procurement agency." Together, only 6 percent of total farmers in the country, have gained from selling wheat and paddy directly to any procurement agency.

In fact, a larger problem than just the increasing MSP is its implementation. Deshpande and Naika [2002] have shown that if the market density is too thin, the middlemen will buy the crops from the farmers at prices below the MSP. Awareness about the MSP, though increasing, is still not adequate. A 2010 Oxfam report showed that only 19% of the farmers knew about the MSP and even those who knew it did not know where to sell their produce at the MSP. A recent report published by Niti Ayog [GOI, 2016] points out that although 81% of the farmers were aware of

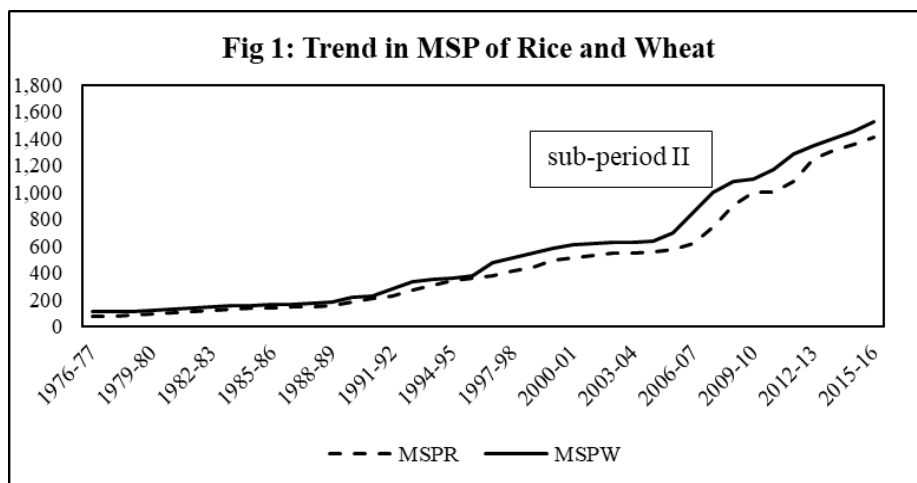
the MSP, only 10% came to know about MSP (which is important from the point of view of decision making) just before the sowing season.

3. Trends in MSP of Wheat and Rice

This section analyses trends in MSP (including the bonus) for two sub-periods (i) 1976-77 to 1995-96 and (ii) 1996-97 to 2014-15. Our analysis begins from 1976-77 as it was from then that data for the merged procurement prices and MSPs are available for both rice and wheat. Recom-

mendations for setting the MSP are made by the Commission for Agricultural Costs and Prices (CACP) but the final price is announced by the central Government.

In nominal terms the Minimum Support Price for both rice and wheat shows a steadily increasing trend as seen in figure 1 below. A comparison between the two crops is, however, possible only when the cost of production is taken into consideration (see table 1 and figure 3).



The 1990s can be considered as a break point in cereals policy. The political environment for cereals policy changed in the 1990s, when India entered an era of coalition governments and the farm lobby became more influential. During 1995/96-2001/02 the Government set MSPs above the recommendations of the Commission on Agricultural Costs and Prices (which is based on production costs) in 4 of 7 years for rice and 5 of 7 years for wheat [Parikh et Al., 2003, Pp. 891-895]. Also, since the mid-1990s the Government of India produced several major policy documents that addressed problems plaguing the

agricultural sector. These areas include: (a) liberalising and improving the functioning of commodity markets, (b) reforming commodity price policy, (c) rationalising input subsidies, (d) increasing productivity-enhancing investments (research and development, extension, rural infrastructure and services), and (e) reforming public sector institutions and adopting participatory approaches [World Bank, 2005]. All this was in the backdrop of the Indian economy having embarked on a path of major all-round economic reforms in 1991, which involved deregulation, reduced government participation in economic

activities, and liberalisation. Though many of these reforms were not directly affecting agriculture sector, yet there was an indirect impact on agricultural production and availability, of the devaluation of exchange rate; liberalisation of external trade and removal of protection to industry. The impact of trade liberalisation on domestic prices and operations of MSP came under review. It was pointed out that "domestic price policy must take a clear note of the international trade potential of the crops, the world prices and the trade behavior" (<http://ageconsearch.umn.edu/bitstream/204353/2/03-RSD-Liberalisation-Report-Final.pdf>).

In making its recommendations, the Commission for Agricultural Costs and Prices (CACP), is guided by issues like the demand and supply, the cost of production, domestic and international price trends, terms of trade between agriculture and non- agriculture and implications of MSP on consumers. The cost of production is an important factor that in determination of MSP.

After the liberalisation of policies, the international prices of the crops were also kept in mind. The 'C2 cost' is the comprehensive cost of production which takes into account all the cost components other than management cost. Rental cost of leased land, imputed value of family labor and interest on the value of owned capital are included in the calculation of C2. However, it has been observed that there is a significant difference between the CACP recommendations and the final MSP which is announced in most of the years. This gap became more pronounced in the second half of the 1990s when India began to remove quantitative restrictions on cereal exports. Producers initially benefited from relatively high world prices. However, when world prices fell back towards trend in the late 1990s, there was pressure to compensate producers for the impact of lower world prices by increasing MSPs more than that recommended by the CACP [Jha et. Al., 2007]. The following graph (figure 2) shows the difference in MSP and CACP recommended prices as a percentage of the latter.

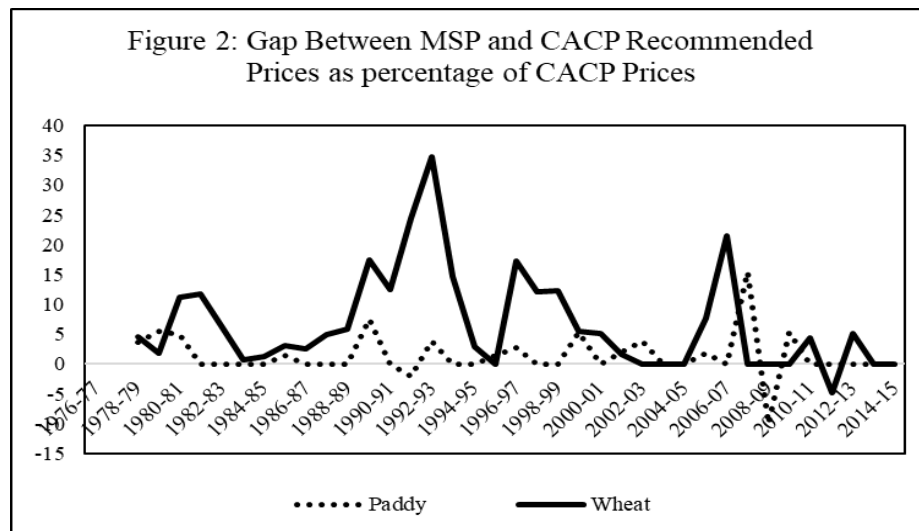


Table 1. Ratio of MSP to Costs of Production for Paddy and Wheat

Year	Cost Per Quintal (Rs.)		MSP per Quintal (Rs)		Ratio of MSP to Cost (%)	
	Paddy	Wheat	Paddy	Wheat	Paddy	Wheat
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1976-77	81.2	110	74	110	0.91	1
1977-78	75.9	100	77	112	1.01	1.12
1978-79	85.6	100	85	115	0.99	1.15
1979-80	100.3	103	95	117	0.95	1.14
1980-81	101	122	105	130	1.04	1.06
1981-82	99	122	115	142	1.16	1.16
1982-83	116	125	122	151	1.05	1.21
1983-84	108	135	132	152	1.22	1.13
1984-85	113	133	137	157	1.21	1.18
1985-86	118	123	142	162	1.2	1.32
1986-87	124	132	146	166	1.18	1.26
1987-88	144	146	150	173	1.04	1.18
1988-89	147	168	160	183	1.09	1.09
1989-90	172	172	185	215	1.08	1.25
1990-91	185	197	205	225	1.11	1.14
1991-92	218	204	230	280	1.06	1.37
1992-93	238	238	270	330	1.13	1.39
1994-95	279	294	340	360	1.22	1.19
1995-96	306	318	360	380	1.18	1.13
1996-97	338	361	380	475	1.12	1.32
1997-98	370	381	415	510	1.12	1.34
1998-99	398	383	440	550	1.11	1.44
1999-00	442	415	490	580	1.11	1.40
2000-01	448	450	510	610	1.14	1.36
2001-02	469	466	530	620	1.13	1.33
2002-03	530	499	550*	620	1.04	1.24
2003-04	483	498	550	630	1.14	1.27
2004-05	529	537	560	640	1.06	1.19
2005-06	529	592	570	700&	1.08	1.18
2006-07	569	586	620^	850#	1.09	1.45
2007-08	595	574	745**	1000	1.25	1.74
2008-09	619	625	900\$	1080	1.45	1.73
2009-10	645	701	1000\$	1100	1.55	1.57
2010-11	742	826	1000	1170@	1.35	1.42
2011-12	888	927	1080	1285	1.22	1.39
2012-13	1,152	1,066	1250	1350	1.09	1.27
2013-14	1,234	1,109	1310	1400	1.06	1.26
2014-15	1,267	1,147	1360	1450	1.07	1.26

* includes drought relief bonus of Rs 20

^ includes bonus; includes incentive bonus of Rs 40

**includes additional bonus of Rs 100.

\$ includes additional bonus of Rs 50

& includes additional bonus of Rs 50

includes additional bonus of Rs 100

@ includes additional bonus of Rs 50

Source: 1976-77 to 1980-81 :Computed from data available for major rice and wheat producing states from Estimates of Cost of Cultivation by Department of Economics and Statistics (DES) and Agricoop 1981-82 to 2007-08: *Dev. S. M and Rao (2011)* :*Agricultural Price Policy, Farm Profitability and Food Security* 1993-94 is excluded from analysis as too few surveys were done that year

http://www.indiaenvironmentportal.org.in/files/Agricultural%20Price%20Policy%20Farm%20Profitability.pdf 2009-14: www.In-diastat.com

In Figure 2 the dotted line plots the gap between MSP and CACP recommended price as per cent of the CACP recommended price for paddy while the bold line plots it for wheat thus reflecting percentage share of the divergence in case of the two crops. We find this to be much larger for wheat and its occurrence is in many more years too as compared to paddy. Rao [2001] points out that the prices recommended by CACP are finally modified by the Government of India and are often influenced by the political representatives. Deshpande [2003] and Gaiha [2005] too have observed that there exists considerable difference between CACP recommended prices and MSP and that this gap is often biased in favour of some crops, especially wheat.

Announcement of a bonus over and above the declared MSP causes the final prices to further diverge from the CACP recommended prices. The stated purpose of this bonus is to provide additional encouragement to the farmers to produce more and increase the amount available for the procurement. Gupta [2010] points out that these bonuses are often used as a political instrument by ruling party. The recent High Level Committee Report [2015] on restructuring the Food Corporation of India, released in 2015, considers these bonuses as distortionary. In order to curb this practice, the Central government, following the recommendations of the High Level Committee, declared that for April 2015 to March 2016 seasons the Food Corporation of India (FCI) will restrict procurement of food grain from States

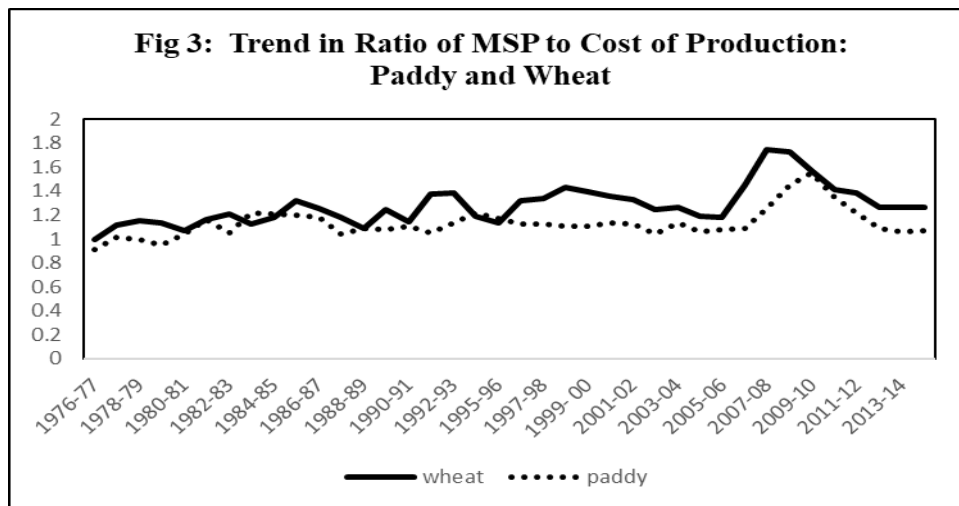
which declare a bonus over and above the Central bonus.

(<http://www.livemint.com/Politics/vcjwRCzFEMreaER5uUkoXJ/Centre-limits-states-power-to-declare-bonuses-on-MSP.html>).

The following table of MSP as a percentage of C2 cost of production allows us to make a comparison between paddy and wheat.

Table 1 shows that the rice costs (per quintal cultivated) have been lower than wheat in most years. In the first sub-period of our analysis (1976-77 to 1995-96) there was only one year, i.e., 1991-92, when rice cost exceed that of wheat. In the second sub-period (1996-97 to 2014-15) there were only eight years when rice costs per quintal were higher than wheat. This includes the last three years of our sample (2012-13; 2013-14 and 2014-15) when rice costs have continuously exceeded that of wheat. However, in these years too the MSP for wheat is seen to exceed that of paddy. Thus the higher MSP for wheat, at least in these years, are definitely not explained by higher cost.

The ratio of MSP to cost has been lower for wheat than paddy only for four years and the same in only one year in our sample of thirty eight long years. For all the other years, the ratio of MSP to cost for wheat has exceeded that of paddy. The trend in ratio of MSP to cost in the last four decades are graphed in Figure 3.



The graph clearly shows that for most years, the ratio of MSP to cost has been higher for wheat than for rice with the maximum difference being recorded in 2006-07 and 2007-08.

In 2006-07 India imported a large quantity of 6 million metric tonnes (MMT) of wheat. This and the price volatility in global food markets in 2007-2008 led Indian policymakers to restrict exports of wheat and rice. The Indian government incentivised its farmers under the National Food Security Mission (NFSM) of 2007 by providing better seeds and raising minimum support prices (MSPs) of wheat and rice by almost 40% in 2 years. This strategy of ensuring better prices and technology access raising grain production by 42 MMT in subsequent five years against a target of 20 MMT. However, with export controls still in place, the situation resulted in massive accumulation of stocks [Saini and Gulati, 2006]. If MSP had not been raised, the open market prices would have risen and the government could have indeed purchased for fair price shops at the open market

prices, but this would have not served the interest of the consumer of raising production and keeping prices under check.

The government tried to balance the demands of rural constituents, who wanted higher prices, with those of consumers and traders, who wanted lower prices. To do so, two policy approaches were used: (a) increase domestic procurement through increases in the MSP and (b) limit exports through export bans and minimum export prices. Baylisa, et. Al., [2016] point out that export restrictions and state procurement prices have both been used to maximise expected rents.

4. Data and Methodology

This paper attempts to assess the impact of MSP on producers and consumers using both the time series data at the all India level as well as at the State level.

- (A) Time series analysis at the all India level is carried out to assess the impact of MSP

on production and on inflation. For this exercise the data set spans the period 1976-77 to 2015-16

- (B) Panel data models using State level data have been estimated to assess the impact of MSP on cropping pattern and ground water depletion. Data pertaining to the States have been analysed for the period 1995-96 to 2010-11.

The States have been bifurcated into two groups. Average production of wheat/rice in a State as a percentage of all India production during the sample period forms the criteria for creation of these

groups. All States which had a share of production exceeding 3% were included in our sample. The first group is of the six states having above 3% share in wheat production. The second group includes ten States which had above 3% share in rice production. Table 2 lists out these two groups of States, viz., the wheat group and the rice group.

Additionally, to analyse the political dimension of support prices, non-parametric regressions have been estimated following the methodology suggested by Haynes and Stone [1989].

Table 2. State-Wise Production Share in All India Production
(Average of 1995-96- to 2010-11)
Group 1 (share in wheat production > 3%)

Wheat Group	Wheat producing States	Percent of all India production
Uttar Pradesh (UP) (inclusive of Uttarakhand)	Uttar Pradesh(UP) (including Uttarakhand)	34.28
2.	Punjab (PUNJ)	20
3.	Haryana (HAR)	12.8
4.	Madhya Pradesh (MP) (including Chattisgarh)	9.75
5.	Rajasthan (RAJ)	8
6.	Bihar (BIH) (including Jharkhand)	5.8
Group 2 (share in rice production > 3%)		
Rice Group	Rice producing States	Percent of all India production
1.	West Bengal (WB)	16
2.	Andhra Pradesh (AP)	13
3.	Uttar Pradesh (UP) (including Uttarakhand)	14
4.	Punjab (PUNJ)	11
5.	Odisha (ODI)	7
6.	Bihar (BIH) (including Jharkhand)	8
7.	Madhya Pradesh (MP) (including Chattisgarh)	7
8.	Tamil Nadu (TN)	7
9.	Karnataka (KAR)	4
10.	Haryana (HAR)	3.2

Note: 1. Strictly speaking Assam is marginally above Haryana but has not been considered in the rice panel as it is a special category state. Since FCI does not procure much rice in Assam, on grounds of higher moisture content and higher percentage of broken grains, farmers in Assam do not get the benefit of Minimum Support Price (MSP).

(<http://sfcassam.nic.in/14thFC/14thFC-Memorandum.pdf>)

Table 3 lists and defines the variables used for the analysis.

Table 3. Variables and Definitions

Variables	Definitions	Units
(1)	(2)	(3)
ACOURSE	Area under COARSE CEREALS (include Bajra; Jowar; Maize and Ragi)	000 hectares
ARICE	Area under Cultivation of Rice	000 hectares
AWHEAT	Area under Cultivation of Wheat	000 hectares
ATUBE	Area under irrigation by Tubewells	000 hectares
CPI (IWF)	Consumer Price Index (FOOD-Industrial Workers)	Base 2001
GDCFA	Gross Domestic capital formation in agriculture	Rs billion
MSPR	Minimum Support Price of Rice	Rs per quintal
MSPW	Minimum Support Price of Wheat	Rs per quintal
PCY_REAL	Per capita Gross State Domestic Product at constant prices (2004-05 base)	Rs
PRODNR	Production of Rice	Lakh tons
PRODNR	Production of Wheat	Lakh tons
RAIN	Rainfall in the year	mm
RAIN_MARCH	Rainfall during the months of March to May (sowing season for coarse cereals)	mm
YCOARSEt-1	Yield of COARSE CEREALS in period t-1	Kg per hectare
YLDRICE	Yield of rice	Kg per hectare
YLDWHEAT	Yield of wheat	Kg per hectare
WPIR	Wholesale Price Index of rice	Base 2011-12
WPIW	Wholesale Price Index of wheat	Base 2011-12
DUM_DROUGHT	=1 in drought years 2002-03; 2004-05 and 2009-10 =0 otherwise (these three drought years are among the 26 major drought years, defined as years with All India Summer Monsoon Rainfall (AISMR) less than one standard deviation below the mean.(http://www.tropmet.res.in/~kolli/MOL/Monsoon/ Historical/air.ht)	
DUM1	=1 one year after election, =0 otherwise	
DUM2	=1 two years after election. = 0 otherwise	
DUM3	=1 three years after election. =0 otherwise	
DUM45	=1 four or five years after election. =0 otherwise	
DUM	=1 in the year of election =0 otherwise	

5. Economic Impact of MSP: An Empirical Investigation

This section attempts to empirically assess the impact of MSP on (i) production (ii) inflation (iii) distortion in cropping pattern and (iv) ground water depletion.

(i) Minimum Support Prices and Production

MSP is announced well before the sowing season for both rice and wheat. Thus, the decision about which crop to cultivate is expected to be affected by the support prices.

Post the Green Revolution, grain production did increase significantly and India did move from being a grain deficient nation to a surplus one. Even after this transition, however, the support prices have continued to increase steadily

and the question has often been raised as to whether it has a positive impact on production. In this sub-section, we examine if MSP has served its intended purpose of acting as an incentive price to adopt better technology such as fertilisers and high yielding variety of seeds, and had a significant impact on production of rice and wheat.

We do this analysis at the all India level for which the following models are estimate

$$\text{PRODNR} = \alpha + B_1\text{MSPR} + B_2\text{RAIN} + B_3\text{GDCFA} + \varepsilon \quad \dots(1)$$

$$\text{PRODNR} = \alpha + B_1\text{MSPW} + B_2\text{RAIN} + B_3\text{GDCFA} + \varepsilon \quad \dots(2)$$

All the series have been log-transformed and tested for unit roots using the Augmented Dickey Fuller method (see Appendix A). Variables included in the model are in their stationary form. The results of the regression are reported in Table 4.

Table 4. Impact of MSP on Production

Independent Variables	Dependent Variables	
	PRODNR	PRODNRW
(1)	(2)	(3)
MSPR	0.078 (0.83)	-
MSPW	-	0.14 (0.425)
RAIN	0.955*** (0.00)	0.45*** (0.002)
GDCFA	-0.090 (0.386)	0.07 (0.285)
CONS	-6.709*** (0.000)	-3.114** (0.002)
R ²	0.46	0.32
F	8.99*** (0.00)	5.06*** (0.00)
Durbin Watson	2.5	2.72

Note:

1. All variables are log transformed and considered in their stationary form

2. Figures in parenthesis are p values

3. *** denotes significance of 1%

** denotes significance of 5%

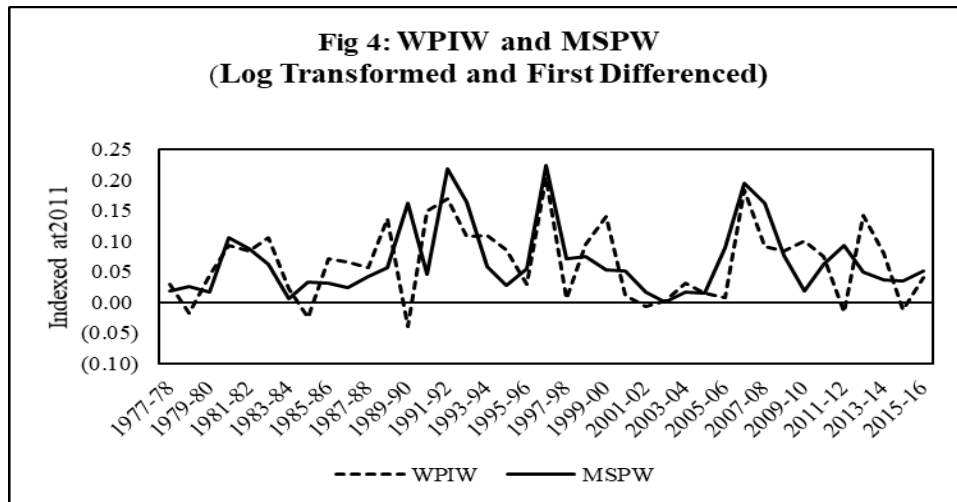
The regression results show that MSPR and MSPW do not seem to have a statistically significant impact on production of either rice or wheat respectively. Thus, our model seems to suggest that one of the intended objective of MSP, that of serving as an incentive price so as to enhance production has not been served. Our control variable RAIN is positive and highly significant and Gross Domestic Capital Formation in agriculture (GDCFA) does not appear to have had a significant impact on production. Given the low investments in agriculture, the statistical insignificance of this variable was to be expected.

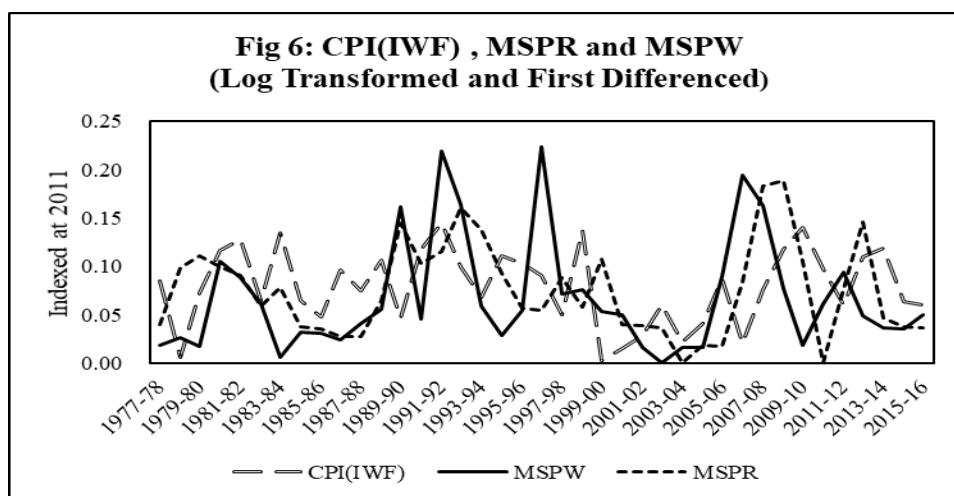
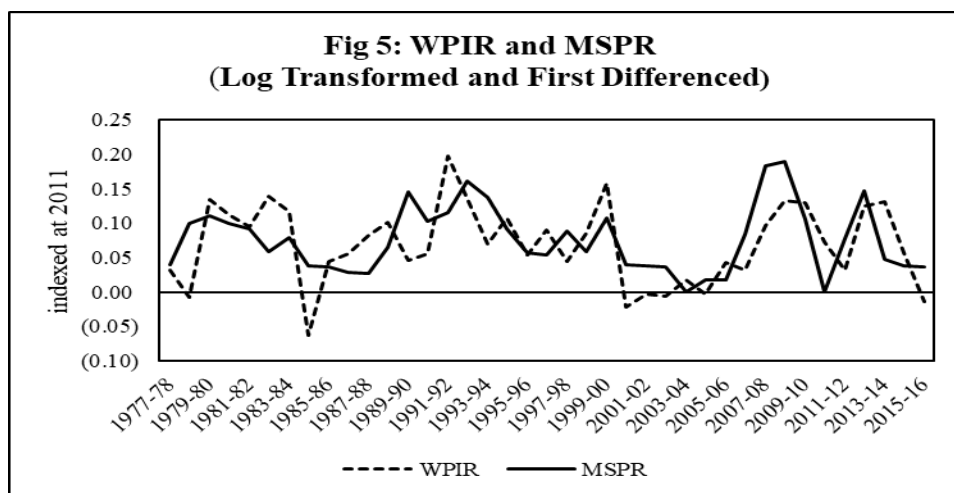
(ii) *Minimum Support Prices and Inflation*

Food inflation has been a persistent worry for

India in the past few decades. The main factors behind this phenomenon have been identified as increasing demand due to higher rural wages, rising cost of production, impact of droughts as well as persistent increases in support prices [RBI, 2014]. Higher procurement following increased support prices reduces the supply in the open market and causes prices to increase. The MSP will thereby affect the food index of industrial workers who have no home production.

In order to eliminate the common trend resulting from non stationarity of the variables we have graphed the relation between the WPI for rice and wheat and MSP of rice and wheat after log transformation and first differencing of the variables.





The consumer price index for industrial workers CPI (IW) is sometimes considered to preferable to both the wholesale price index and the GDP deflator as the measure of an inflation rate [Mahambare and Bhalla, 2013]. CPI(IW) is released as 'General' and 'Food'. In the CPI (IW) the weight of food is almost 50% and the weight of cereals in food is 12.5% [Das and George, 2017]. Hence we decided to consider CPI (IW) -Food, which we label as CPI (IWF) as the index for studying the impact of MSP.

While it is clear that wholesale price indices of rice and wheat are closely linked, it is the direction of causation which has attracted considerable discussion.

To test for the direction of causation we perform the Granger causality test between MSP of rice and wheat and CPI as suggested by Bhalla [2014] and Lahiri [2014]. Further, we check for robustness of our results by testing for causality between MSPR and MSPW and their respective WPIs (WPIR and WPIW). Our analysis is carried out for the period 1976-77 to 2015-16. All the series are log transformed and tested for unit roots using the Augmented Dickey Fuller method (see Appendix A). Since all the variables are I(1), the Granger causality test was carried out using first difference of the log transformed series (which approximate percentage change). The results from Granger Causality tests are shown in Table 5 below.

Table 5. Granger Causality

Variables and Direction	No. Of lags	F statistic	Decision on Null Hyp. (H_0 = no causality)
(1)	(2)	(3)	(4)
MSPR → CPI(IWF)	2	5.636*** (0.008)	REJECT (causation exists)
CPI(IWF) → MSPR	2	0.728 (0.49)	CANNOT REJECT (causation does not exist)
MSPW → CPI(IWF)	2	3.400** (0.046)	REJECT (causation exists)
CPI(IWF) → MSPW	2	1.816 (0.179)	CANNOT REJECT (causation does not exist)
MSPR → WPIR	2	5.395*** (0.0096)	REJECT (causation exists)
WPIR → MSPR	2	0.288 (0.751)	CANNOT REJECT (causation does not exist)
MSPW → WPIW	2	7.180*** (0.003)	REJECT (causation exists)
WPIW → MSPW	2	1.812 (0.319)	CANNOT REJECT (causation does not exist)

Note:

All variables are log transformed and in first difference

Lags selection by Schwarz Criterion/Hannan Quinn/Akaike criterion

****indicates significance at 1%, ** indicates significance at 5%*

Figures in parentheses indicate p values.

In case of both rice and wheat, we find that the direction of causation is unidirectional from MSP to inflation, both with WPI and CPI. These results clearly suggest that higher support prices do indeed add to the inflationary pressures in the economy, thus implying that putting a check on MSP would certainly help in curbing inflationary pressures.

(iii) MSP and Distortion in Cropping Pattern

The impact of MSP on cropping pattern has been a matter of concern for economists like Chand [2003], Shergill [2005], Parikh and Singh [2007], Dev [2011]. Strong Government infrastructure for support prices induced production of rice and wheat in States like Punjab and Haryana, where procurement operations are well established [CRISIL, 2014]. This result is not vindicated in our study at the national level, but is captured at the State level as will be seen in Table 11, thereby implying that there is considerable

regional variation. An alternative for rice in the kharif season is coarse cereals like jowar, bajra and maize; pulses such as tur as well as kharif oilseeds. In case of wheat which is grown in the Rabi season, alternatives are pulses such as gram and oilseeds such as rapeseed and mustard. Kannan and Sundaram [2011] have shown that the cropping pattern has changed in favour of wheat and rice at the expense of coarse cereals, especially the in the North Western part of India. The share of coarse cereals in gross cropped area has fallen across all zones in the country in the last four decades. In case of pulses, there has been a fall in North Western and Eastern Zones only. Most of the States in the North Western and Eastern Zone are the large producers of wheat or rice or both. Chand [2003] and Gaiha and Kul-karni [2005] have also commented on the distortion in cropping pattern caused by minimum support prices. Table 6 shows how the percentage shares of different crops in the gross cropped area of India has changed in the past few decades.

Table 6. Share of crops in Gross Cropped Area (All India)

CROPS	(%)				
	TE 1973-74	TE 1983-84	TE 1993-94	TE 2001-02	TE 2010-11
(1)	(2)	(3)	(4)	(5)	(6)
Rice	22.7	22.7	22.9	24	22.6
Wheat	11.5	13.3	13.2	14.2	14.8
Maize	3.5	3.3	3.2	3.6	4.2
Other Coarse cereals	23.1	20.3	15	12.5	10.1
Total Coarse cereals	26.6	23.3	18.2	16.1	14.3
Total Pulses	13.4	13.3	12.1	11.9	12.4
Total oilseeds	10	10.5	14.1	13.4	14.8

TE: Triennium ending averages

Source: Agriculture Statistics at a Glance, GOI, various issues

It is evident from Table 6 that between 1973-74 to 2001-02 the share of rice and wheat in gross cropped area increased. In the same period, however, the share of coarse cereals has reduced significantly. A falling trend is seen for pulses as well. For oilseeds, however, the trend appears to be positive although there was a fall in TE

2001-02 over TE 1993-94. Overall, the situation improved a little in TE 2010-11 for oilseeds and pulses, but the share of coarse cereals continued to fall.

We estimate a panel data model for rice producing states for the period 1995-96 to 2010-11

**Table 7. Impact of MSP on Coarse Cereals
(Panel Data 1995-96 to 2010-11)**

Rice Group		
	FIXED EFFECT ACOARSE	OLS (WITH STATE DUMMIES) ACOARSE
(1)	(2)	(3)
ACOARSE (t-1)	0.2992414*** (0.001)	0.2992414*** (0.001)
YCOARSE (t-1)	-0.0140766 (0.0.759)	-0.0140766 (0.0.759)
MSPR	-0.1147*** (0.002)	-0.1147*** (0.002)
PCY_REAL	0.1620 (0.405)	0.1620 (0.405)
RAIN_MARCH	-0.0164 (0.227)	-0.0164 (0.227)
DUM_DROUGHT	-0.030 (0.112)	-0.030 (0.112)
CONSTANT	5.356*** (0.000)	3.706 (0.00)
DUM_ANDHRA P		1.972*** (0.00)
DUM_UTTAR P		2.616*** (0.00)
DUM_PUNJAB		0.754*** (0.00)
DUM_ODISHA		0.838*** (0.00)
DUM_TAMIL NADU		1.692*** (0.00)
DUM_BIHAR		1.550*** (0.00)
DUM_MADHYA P		2.629*** (0.00)
DUM_HARYANA		1.786*** (0.00)
DUM_KARNATAKA		2.665*** (0.00)
Adj. R-sq		0.9947
F (15, 134)		1881.82 (0.000)
HAUSMAN	48.10 (0.000)	

1. The Rice Group of States includes West Bengal; Andhra Pradesh; Uttar Pradesh (inclusive of Uttarakhand); Punjab; Odisha; Tamil Nadu; Bihar; Madhya Pradesh (inclusive of Chattisgarh); Haryana; Karnataka
2. All variables have been log transformed have been considered in their stationary form.
3. ***Indicates significance at 1%; ** significance at 5 and * significance at 10%
4. Figures in parentheses indicate p values

(Group 1 and Group 2 in Table 2). In case of the rice group, we looked at the impact of MSP of rice (MSPR) on acreage under coarse cereals which are an alternative to rice. A negative coefficient for MSPR would indicate that MSP of rice has kept the farmers away from cultivating alternative crops like coarse cereals. In order to take care of the fact that shift in demand from coarse cereals to rice and wheat could have occurred on account of increase in incomes, we include Per Capita Income as a control variable in the model, as a proxy for demand.

$$\begin{aligned} \text{ACOARSE}_{(it)} = & \alpha + B_1 \text{MSPR}_i + B_2 \text{ACOARSE}_{i(t-1)} + B_3 \text{PCY_REAL}_{(it)} + B_4 \text{RAIN_MARCH}_{(it)} \\ & + B_5 \text{DROUGHT}_{(it)} + \varepsilon_{(it)} \quad \dots(3) \end{aligned}$$

All the variables have been log transformed and differenced so as to consider them in stationary form and results are tabulated below (Table 7).

The estimated model clearly shows that the Minimum Support Price for rice (MSPR) has a negative and significant impact on the area under cultivation of coarse cereals (ACOARSE). The variable continues to be highly significant despite the presence of a highly significant lagged dependent variable. This suggests a strong and clear vindication of our hypothesis that MSP of rice has indeed been a significant factor leading to the declining area under coarse cereals. The model has controlled for per capita incomes (PCY_REAL) as the shift in demand away from coarse cereals could have occurred on account of

rising per capita income. The variable, however, is seen to be statistically insignificant in our model.

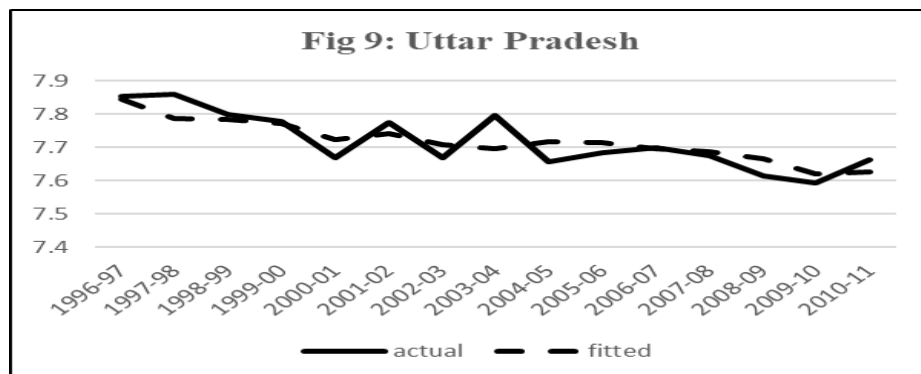
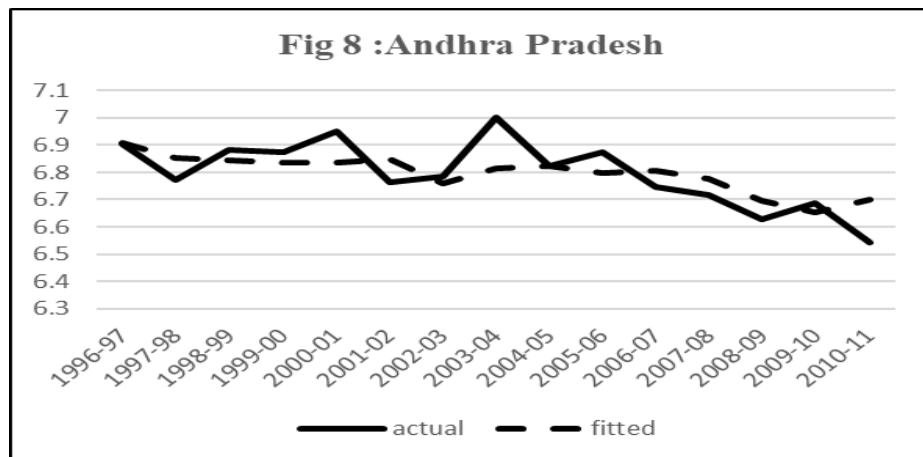
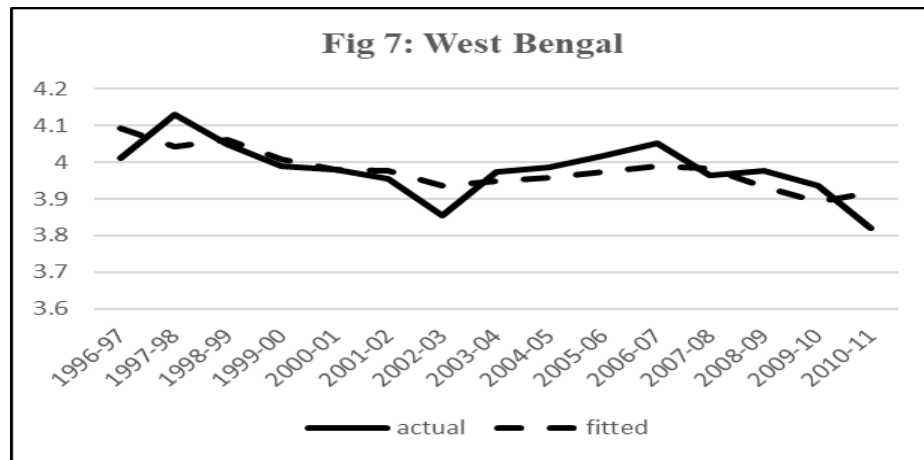
In order to capture state specific estimates from the panel data we have carried out two exercises (a) we obtained the fitted values for each of the states and plotted the actual and fitted state-wise and (b) we tabulate the RMSPEs (state-wise).

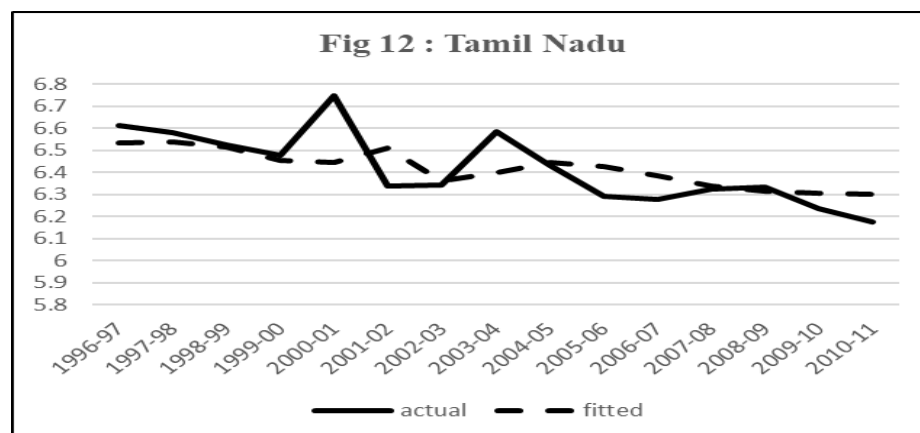
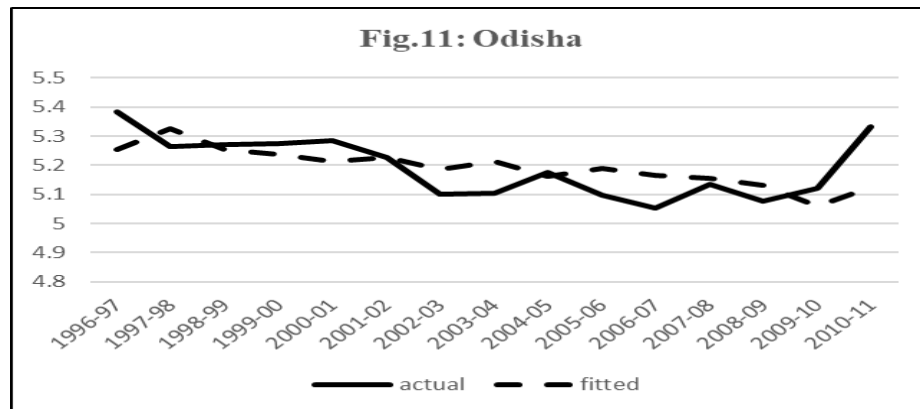
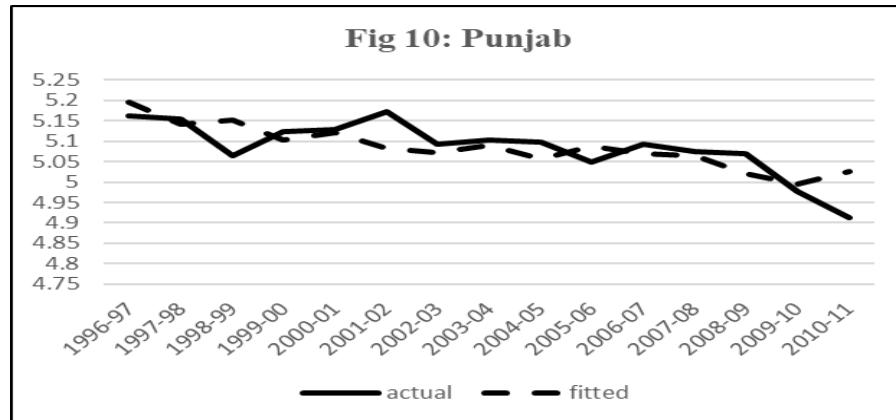
The RMSPEs reported in Table 8 below are uniformly low with the lowest being that for the States of Uttar Pradesh and Haryana.

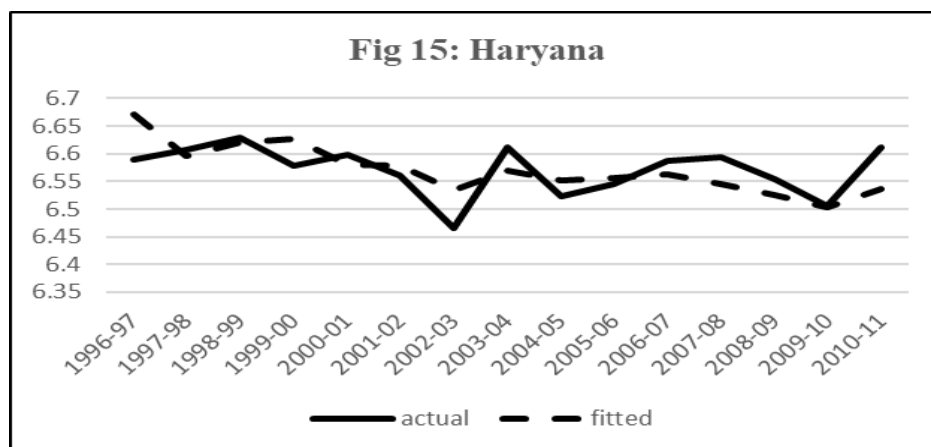
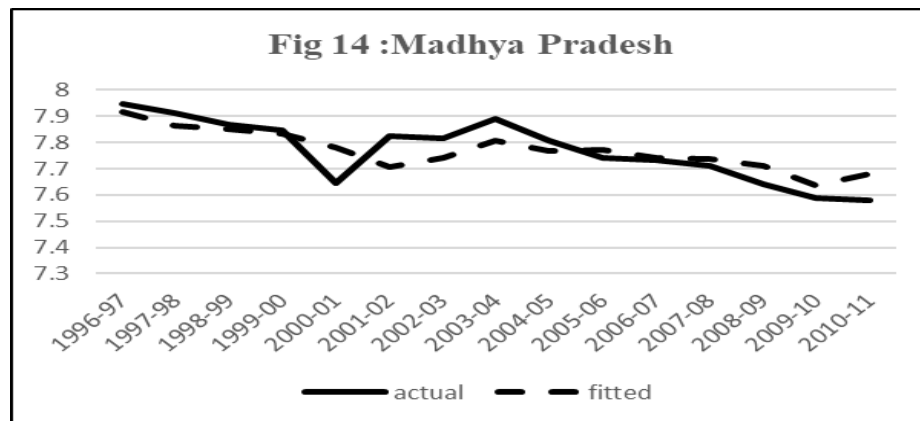
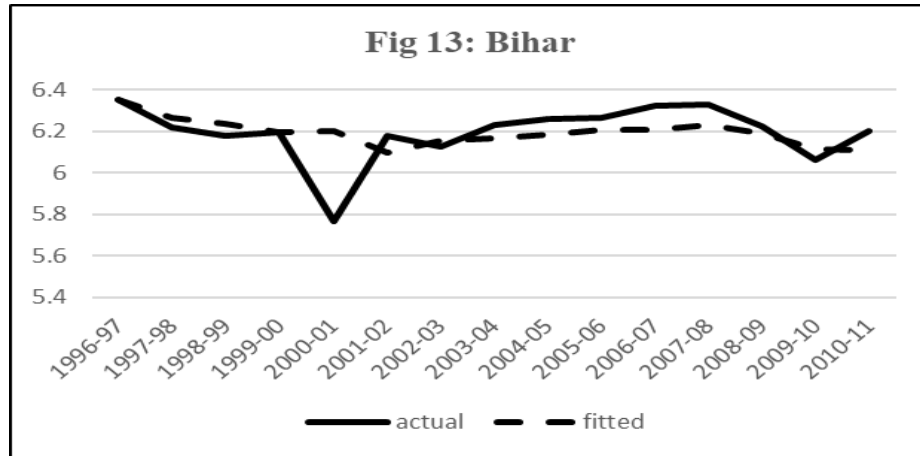
Table 8. Root Mean Square Percentage Errors (State-wise)

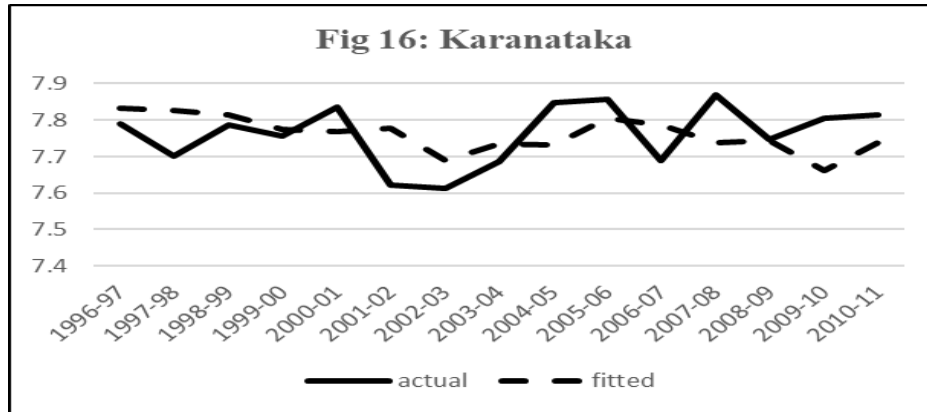
STATE	RMSPE
West Bengal	1.46%
Andhra Pradesh	1.30%
Uttar Pradesh	0.64%
Punjab	0.97%
Odisha	1.70%
Tamil Nadu	1.89%
Bihar	2.35%
Madhya Pradesh	0.92%
Haryana	0.67%
Karnataka	1.29%

The state-specific graphs (Figures 7 to 16), however, do show some discrepancies. The state-specific graphs suggest that model performs reasonably by capturing the broad trend pattern for most of the States. However, State specific differences, cause many of the turning points for individual States to be missed out by the model.









(iv) *MSP and Ground Water Depletion*

Ground water has played a major role in ushering in the Green Revolution in the country [Repetto, 1994; Shah et Al, 2007, Pp. 395-423]. Ground water irrigation has ensured food security in times of inadequate rainfall and led to a substantial increase in agricultural productivity. However, this has led to a substantial depletion in groundwater. According to the Central Groundwater Board (CGW), 15% of the administrative blocks are over-exploited (more water is extracted than is replenished each year). The Green Revolution in India was largely concentrated in the States of Punjab, Haryana and western Uttar Pradesh. A major factor in it was the introduction of tube well technology along with the government policies allowing easy availability of credit, hybrid seeds and rural electrification [Gandhi, 2009]. Unlike canal irrigation, which is largely state financed, ground water irrigation is largely privately financed [Pandey, 2014]. This lack of government regulation in its use has led to indiscriminate usage

and alarming depletion in the level of groundwater in States like Punjab, Rajasthan, and Haryana [Pandey, 2014]. Groundwater is by far the most important source of irrigation in the country accounting for over 60% of total irrigation [Suhag, 2016]. It is feared that 60% of the groundwater blocks could become critical by 2025 [World Bank, 2005]. Data from Minor Irrigation Census Report [GOI, 2001] shows that 57% of tube wells in India are in the three States of Punjab, Haryana and Uttar Pradesh. The CGW Board defines the 'Stage of Ground Water Development' as the ratio of annual ground water draft to net annual ground water availability in percentage terms. According to CGW Board, the Stage of Ground Water Development for some States like Haryana, Punjab and Rajasthan is more than 100%. This implies that in these States the average annual ground water consumption is more than average annual ground water recharge. Table 9 shows the Stage of Ground Water Development from 1995 to 2011 for States in our rice and wheat groups.

Table 9. State-Wise Status of Ground Water

State	Stage of Groundwater Development (%)			
	Years			
	1995	2004	2009	2011
(1)	(2)	(3)	(4)	(5)
Punjab	97.66	145	170	172
Haryana	112.18	109	127	133
Rajasthan	86.42	125	135	137
Tamil Nadu	26.39	85	80	77
Karnataka	34.6	70	68	64
Uttar Pradesh	46.89	70	72	74
Madhya Pradesh	27.09	48	56	57
Andhra	28.56	45	46	45
Bihar	46.33	39	43	44
West Bengal	38.19	42	40	40
Odisha	21.23	18	26	28
All India	41.5	58	61	62

Source : Central Ground Water Board Year Book 2011-12

<http://www.cgwb.gov.in/documents/Ground%20Water%20Year%20Book%20-%202011-12.pdf>

<http://www.cgwb.gov.in/documents/Dynamic-GW-Resources-2011.pdf>

It is evident from Table 9 that the Stage of Ground Water Development has worsened between 1995 and 2011 for most of the States. From the above table, it is also evident that groundwater depletion has been highest in three States of Punjab, Rajasthan and Haryana where Stage of Ground Water Development has crossed the 100% mark.

Agricultural policy has had an important role in ground water depletion of the above mentioned States. One important factor that is believed to have caused the over utilisation of ground water resources is the extensive cultivation of kharif rice in some States especially in Punjab and Haryana. Maximum procurement of food grains in India comes from these States. Chand [1999], Chand and Haque [1998], Bathla [1997, Pp. 546-54], Kataki, Hobbs and Adhikary [2001] and Duxbury [2001] argue that both in Punjab and Haryana, the rice wheat rotation is unsustainable and has led to

ground water depletion in these States. In this section, we attempt to analyse the role of MSP of rice and wheat in causing ground water depletion in the States of Punjab, Rajasthan and Haryana.

Rice requires considerable surface water. At the time of transplantation, rice shoots have to stand in 5-6 mm of water and one rice crop requires 1400mm of water, most of which is obtained from tube well irrigation. Several studies like Rodell [2009] have claimed that it is unlikely that changes in rainfall are responsible for ground water depletion. Subsidised electricity combined with remunerative prices for a water intensive crop has led to over exploitation of ground water in these States. This is also seen from the increased area irrigated by tube wells. The correlation of number of tube wells and the MSPR for these States where groundwater development is high is shown in the Table 10.

Table 10. Spearman's Correlation between MSPR and Area Irrigated by Tubewells (1995-96 to 2010-11)

States	Correlation
(1)	(2)
Punjab	0.49* (0.055)
Haryana	0.964*** (0.000)
Uttar Pradesh	0.996*** (0.000)

All variables are log transformed and have been considered in their stationary form.

Figures in parentheses are p values

* indicates significant at 10%; ** indicates significant at 5%.

*** indicates significant at 1%

The above results suggest that tube wells have increased along with MSPR in Punjab, Haryana and Uttar Pradesh. The reason for tube wells flourishing to meet the water requirement of rice is cheap electricity. During 2007, Punjab State Electricity Board (PSEB) supplied 750 crore (7.5 billion) units of electricity to the tube-wells which is almost 28 % of the total consumption of electricity in the State. The Government of Punjab [2013] announced that it will provide Rs 2300 crore subsidy on electricity to tube wells by reducing power tariffs from Rs 14 to Rs 10.50 per unit.

To examine the impact of MSP on ground water depletion, we select the sub-set of states within the rice group and wheat groups, which have the Stage of Ground Water Development above the national average. Within the rice group the states included are Punjab, Haryana, Uttar Pradesh, Tamil Nadu and Karnataka. For the wheat group, we consider the states of Punjab, Haryana, Rajasthan and Uttar Pradesh, which too are above the national average Stage of Ground Water Development.

To examine the impact of MSP of rice on the acreage decision we estimate the following panel data models for the rice and wheat groups.

$$\begin{aligned} \text{ARICE}_{it} &= \alpha + B_1 \text{MSPR}_{it} \\ &+ B_2 \text{YLDRI}_{it-1} + \varepsilon_{it} \quad \dots(4) \end{aligned}$$

$$\begin{aligned} \text{AWHEAT}_{it} &= \alpha + B_1 \text{MSPW}_{it} \\ &+ B_2 \text{YLDWHEAT}_{it-1} + \varepsilon_{it} \quad \dots(5) \end{aligned}$$

All series have been log transformed and checked for stationarity. The regression results with the log transformed variables are reported in Table 11 below.

Table 11. MSP and Area Under Cultivation of Rice and Wheat (1995-96 to 2010-11)

	ARICE	AWHEAT
(1)	(2)	(3)
MSPR	0.0884** (0.011)	-
YLDRI _{t-1}	0.249*** (0.010)	-
MSPW	-	0.110*** (0.001)
YLDWHEAT _{t-1}	-	-0.176 (0.325)
constant	5.12 (0.000)	8.902(0.000)
Wald chi2(2)	18.05(0.0001)	13.23 (0.0013)
Hausman Test	0.78 (0.6781)	0.17 (0.9176)
Chi-2 statistic		
N	80	64
No. of groups	5	4

1. All variables have been log transformed and considered in their stationary form

2. Figures in parentheses are p values.

3. * indicates significance at the 10%, ** indicates 5%, and *** indicates 1% level, respectively

Table 11 above shows that MSPR and MSPW have a positive and significant impact on the area under cultivation of rice and wheat respectively. This, in some sense, contradicts our finding at the national level where we observed that MSP does not have any significant impact on production. This contradiction is suggestive of the fact that there is considerable variation in the impact of MSP across states. In the result from the panel data analysis reported in Table 11 above, we have confined ourselves to the rice and wheat groups alone. For these States, clearly the MSP has positively impacted the area under cultivation of these crops.

With rice and wheat being water intensive crops, the additional requirement of water in these States, have been met by tube wells, which has adversely affected ground water availability [Pandey, 2014]. Hence we have used area irri-

gated by tube wells (ATUBE) as our proxy for groundwater depletion (ATUBE) and estimated the using the Two Stage Least Squares (TSLS) model for the rice and wheat groups using panel data set for the period 1995-96 to 2010-11.

$$ATUBE_{it} = \alpha + \beta_1 ARICE_{it} + \beta_2 PCY_REAL_{it} + ELEC_{it} + \varepsilon_{it} \quad \dots(6)$$

$$ARICE_{it} = \alpha + \beta_0 ARICE_{it-1} + \beta_1 MSPR_{it} + \beta_2 YLDRICE_{it-1} + \varepsilon_{it} \quad \dots(7)$$

And for the wheat group:

$$ATUBE_{it} = \alpha + \beta_1 AWHEAT_{it} + \beta_2 PCY_REAL_{it} + ELEC_{it} + \varepsilon_{it} \quad \dots(8)$$

$$AUCW_{it} = \alpha + \beta_0 AWHEAT_{it-1} + \beta_1 MSPW_{it} + \beta_2 YLDWHEAT_{it-1} + \varepsilon_{it} \quad \dots(9)$$

The results from the above models are reported in Table 12 below.

Table 12. Impact of MSP on Ground Water (TSLS Model) (1995-96 to 2010-11)

	Wheat Group	Rice Group
	ATUBE	ATUBE
AWHEAT	0.877*** (0.000)	
ARICE	-	0.941*** (0.000)
PCY_REAL	-0.634 (0.651)	0.216 (0.833)
ELEC#	0.143 (0.297)	0.244** (0.002)
cons	0.0135 (0.993)	-1.771 (0.365)
N	60	75
groups	4	5
Wald Chi2	56.48*** (0.000)	26.12*** (0.000)

Thus, from Tables 11 and 12 above it is evident that in both the rice and wheat groups, the area under cultivation of rice and wheat (which is positively affected by the minimum support price as seen in Table 11), has had a positive and significant impact on area irrigated by tube wells (ATUBE) which is our proxy for depletion of ground water resources.

PCY_REAL and ELEC are introduced as control variables in the model. It is expected that higher per capita incomes and electricity subsidy would boost the area under tubewells. The income variable is not seen to be significant but electricity subsidy shows up as highly significant for the rice group.

The above results make it amply clear that increasing support prices have encouraged rice and wheat cultivation in these states, led by indiscriminate digging of tube wells which, in turn, have resulted in depleting the ground water resources. In Punjab and Haryana, especially which are the common states for both rice and wheat it is the rice-wheat pattern of cultivation which has exacerbated the problem of ground water depletion that needs to be addressed urgently.

1. All variables have been log transformed and considered in their stationary form.
2. States considered are those which are above the national average Stage of Ground Water Development
3. *Rice Group*: Punjab, Haryana, Uttar Pradesh, Tamil Nadu and Karnataka.
4. *Wheat Group*: Punjab, Haryana, Rajasthan and Uttar Pradesh
5. Figures in parentheses are p values
6. Instrumented: AUCR; AUCW
Instruments: PCY_REAL; ELEC; MSPW; MSPR; YLDRCE; YLDWHEAT
7. # The variable ELEC had to be interpolated for the period 2002/03 to 2007/08 due to non-availability of data; source for this variable are the various issues of Planning Commission Reports on the Working of SEBs and Electricity Departments which was discontinued for a few years after the passing of the Electricity Act (2003).

6. A Political Assessment of MSP

India is an economy where a powerful lobby of privileged farmers demanding higher procurement prices coexist with millions of poor farmers whose voices are only heard during the elections as they add to the vote bank. The former lobby for higher prices but the latter is championed by political parties prior to elections as they aspire for their votes. In this situation, it is almost impossible that any administered price, declared by the Government, such as MSP can remain insulated from political pressures.

Elections and MSP

Elections are a vital component of every democracy where re-election is an overriding objective of the incumbent. Hence, all elections generally have an agenda of pleasing the electorate and, in this context, it is expected that MSP will be raised in the year of election or just prior to it. The Central Government also announces a bonus over and above the MSP in certain years to encourage the farmers. In the two sub-sections that follow we examine the impact of elections on MSP and procurement.

Following the methodology suggested by Haynes and Stone (1989), we estimate a non-parametric regression model, which examines the growth of MSP during the years from 1967-68 to 2015-16.

The model that we estimate is:

$$\begin{aligned} \text{Growth of MSP}_t = & \beta_1 \text{Growth of MSP}_{t-1} + \beta_2 \text{DUM1} \\ & + \beta_3 \text{DUM2} + \beta_4 \text{DUM3} \\ & + \beta_5 \text{DUM45} + \beta_6 \text{DUM} \end{aligned} \quad \dots(10)$$

Where:

- DUM1 = 1 in one year after election and if it is not an election year
= 0 otherwise
- DUM2 = 1 in 2nd year after election and if it is not an election year
= 0 otherwise
- DUM3 = 1 in 3rd year after election and if it is not an election year
= 0 otherwise
- DUM45 = 1 in the 4th or 5th year after election
= 0 otherwise.
- DUM = 1 in year of election
= 0 otherwise

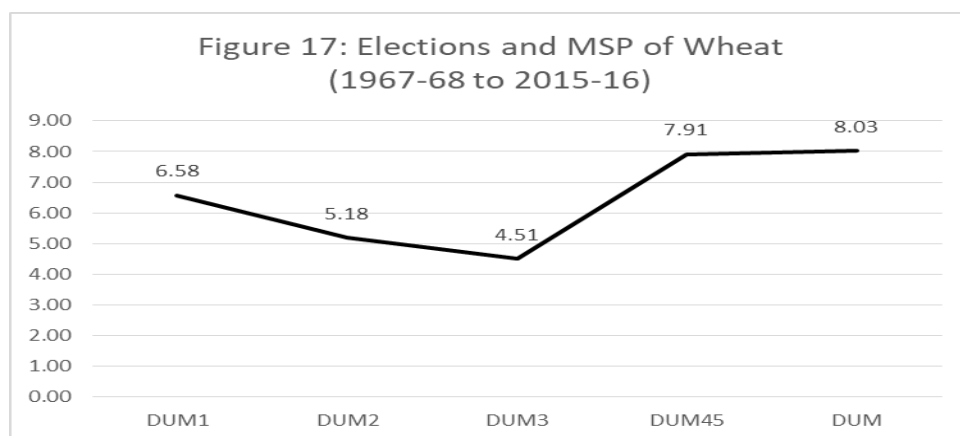
In case the 4th or 5th year after election happens to be the election year, then it is considered as the election year and takes on being the variable DUM.

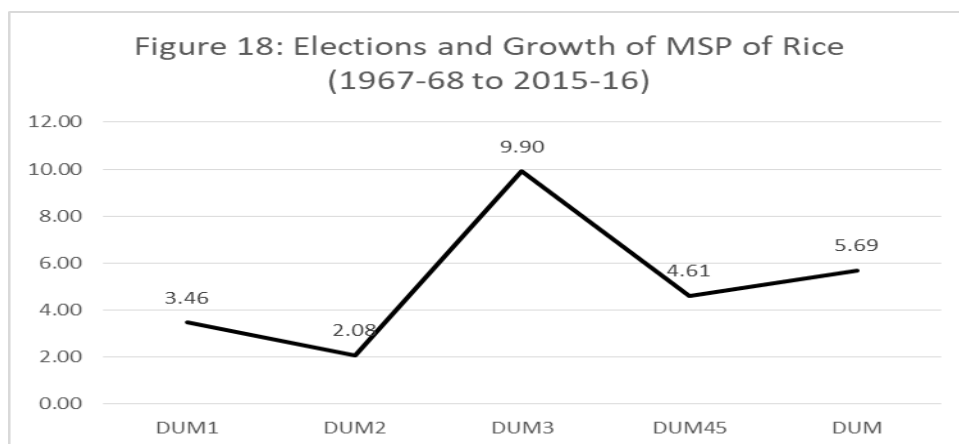
The election years have been adjusted to financial years based on the month of the election and are reported in Table 13 below.

An earlier study by Lalvani [1999] found that the growth in MSP was maximum in the election year for rice and in pre-election year for wheat. Typical of the political business cycle pattern, the study found that for both crops there was a sharp fall in the growth of MSP in two years after elections, when there is no need to win over the electorate. In the present study, we extend the period of analysis to include elections of 1999, 2004 and 2009 and 2014; The graphs below plot the coefficients obtained from the model estimated in equation (10) above.

Table 13. Election Years (1967-68 to 2014-15)

Dates for Lok Sabha Elections	Financial year recorded as election year	Election Year
(1)	(2)	(3)
15th Feb - 28th Feb 1967	1966-67	1966
1st March - 13th March 1971	1970-71	1970
16th March - 20th March 1977	1976-77	1976
3rd Jan - 6th Jan 1980	1979-80	1979
24th Dec - 28th Dec 1984	1984-85	1984
22nd Nov - 26th Nov 1989	1989-90	1989
12th June - 15th Jun 1991	1991-92	1991
27th April - 30th May 1996	1996-97	1996
16th Feb. - 6th Apr 1998	1997-98	1997
5th September - 3rd Oct 1999	1999-00	1999
20th April - 10th May 2004	2004-05	2004
16th April - 13th May	2009-10	2009
7th April - 12th May	2014-15	2014





The graphs above seem to vindicate the Political Budget Cycle hypothesis with the election year Dummy variable (DUM) showing an increase compared to the previous year or two (DUM45).

The earlier study by Lalvani [1999] which carried out the analysis till 1998, found the rice farmers being appeased more than wheat farmers with the approach of elections and concluded that this could possibly be explained by the fact that in case of elections is numbers (more than economic strength) that matters and that the number of rice growers in India outnumbered the number of wheat farmers.

In the present analysis which includes four more Lok Sabha elections [1999, 2004, 2009 and 2014], we find that the impact of elections on MSP

of wheat is stronger than that on rice. The coefficient for the election dummy (DUM) is 8.03 for wheat as against 5.69 for rice. This would seem to suggest that the wheat lobby has had a greater impact in more recent years.

An observation to be made from the above graphs is that while the coefficient for DUM3 is the smallest in case of wheat, it is the largest in case of rice. This led us to examine the years captured by the variable DUM3.

In the case of wheat, we observe that this is due to the fact that the growth rate of MSP was zero in three of the years captured in DUM3, i.e., 1969/70, 1973/74 and again in 2002/03. The first two years can be explained by the fact that following the introduction of High Yielding Varieties (HYV) of seeds during the Green Revolution, the country reaped a bumper crop of

wheat in 1967-68 and prices threatened to fall. In order to prevent prices from falling below economic levels a major decision was made by the government to provide 30 to 40 per cent higher price support to wheat and paddy farmers. In an attempt to bring about stability in prices, the procurement prices for wheat were kept unchanged at Rs. 76 during 1968-69 to 1973-74 [Kahlon and Tyagi, 1989]. This resulted in a zero growth rate for the years 1969/70 and 1973/74, two of the years captured in the variable DUM3. The third year for which we observed zero growth rate in DUM3 was 2002-03. This was on account of the fact that the Government decided to freeze the MSP to the 2001-02 level although a drought bonus was given as a compensation. [Gaiha, 2005]. Thus, the zero growth rate of MSP in three of the years seems to explain the lowest coefficient for DUM3.

In the case of rice, we observe that the coefficient for DUM3 is the highest. This could be explained by the fact the MSPR of rice increased very sharply twice, once in 1973-74 (28% increase) and again in 2007-08 (20% increase). Both these years are captured in DUM3. In the case of rice, in the absence of technological breakthrough with the High yielding variety of seeds, the rice price support policy was not that effective in the 60s and the early 70s. The major breakthrough in rice production was achieved only in the mid-seventies. The procurement price for rice remained almost unchanged during 1968-69 to 1972-73, but it was raised substantially to Rs. 70 in 1973-74 (28% increase). This was primarily to allow for changes in input prices and also to allow for a profit margin so as to enable it to compete with other crops [Kahlon and Tyagi, 1989]. But still, profit margins remained low compared with wheat during the 'seventies, a phase termed as one of 'biased' price policy against rice cultivators [Mitra, 1977]. The second

sharp increase in the growth rate of MSP for rice was in 2007-08, which was primarily due to global food shortages and the added need for procurement which resulted in a sharp increase in procurement price, especially of rice.

At this juncture it is important to draw attention to the fact that all political parties in the States try to woo the state electorate by announcing a bonus over and above the MSP announced by the government. Madhya Pradesh, the granary of India announced on February 3, 2014, just a few months before the elections a bonus of Rs 150 per quintal on wheat. This is a hike of over 17% over 2012-13. Between 2007-08 and 2013-14 the bonus had been a maximum of Rs 100. This action by one State was expected to trigger competitive bonus across the country, especially in wheat growing States of Punjab, Haryana, Rajasthan and Uttar Pradesh. As expected, Tamil Nadu also announced a bonus of Rs 50 over the minimum support price for the rice crop. Election year of 2014 also saw a promised bonus of Rs 300 for rice in Chhattisgarh by the opposition party. The Bihar Government also announced a bonus of Rs 250 pushing the MSP of rice in Bihar to Rs 1560 a quintal. Kerala provided rice farmers an extra bonus of Rs 500 per quintal over the MSP. In contrast, the eastern state of West Bengal discontinued the Rs 70 per quintal bonus on rice since 2012 after the Trinamool Congress Party came to power due to paucity of funds. Higher production and low procurement has led to distress sales across the state. Farmer suicides, which were earlier not heard of, came to the attention of the media. Some relief to this distress could be provided if procurement operations could be improved, but procurement targets were not achieved in most years. However, in this situation of agrarian crisis in West Bengal, some effort has been made to pacify the farmers by announcing early procurement of levy rice. This was also to

avoid the sale of rice to neighbouring States like Bihar where the bonus had already been announced. (<http://www.rkmp.co.in/general-do-main/news-and-events/india-west-bengal-state-lacks-funds-to-procure-paddy-rice-bihar-state>)

Bonuses can be justified when the production is insufficient, procurement is low or when the buffer stocks are in deficit. With none of the above being a reality there appears to be no economic justification of central or state level bonuses. This prevalence of irrational incentives distorts the rice and wheat markets. The bonuses awarded by some States make the Central Government's restraint on increasing support prices useless and complicates the picture by leaving very little room for private trade. To check inflation and prevent any further incentive to grow more rice and wheat, the Central Government has issued a directive in July 2014 to the state Governments not to declare any bonus over and above the MSP. The directive emphasizes that the FCI will not procure food grains nor give subsidy on distribution to such States.

Giving autonomy to the FCI could be considered as a possible solution to this problem. However, this is easier said than done. Currently, the FCI does not have a say either in the purchasing price (MSP) or the selling price (issue price); neither in the quantity it wants to buy (procurement) nor the quantity it wants to sell (to the Public Distribution System). All these policy decisions are currently the prerogative of the Central government. This essentially implies that the FCI continues to procure irrespective of whether the market prices are profitable or not. This has led to FCI being saddled with increasing levels of food stocks. With FCI and state-level entities not having enough storage space, FCI has no choice but to leave these grains out in the open. The other big problem, which FCI is often

accused of is the burgeoning subsidy bill. The increasing levels of subsidy are on account of the fact that while MSPs keep increasing, the issue prices hardly ever do and the FCI has control over neither. (<http://www.livemint.com/Opinion/BjEzMjpPpLhhdPhbDNSF5K/Why-reforming-the-FCI-is-such-a-difficult-task.html>). Thus the recommendation of the High Level Committee [GOI, 2015] of giving the FCI a 'face lift' in terms of greater autonomy and flexibility, will ensure that the credit and flack, can both be laid at the doorstep of the FCI. However, this would require the Central government to let go of the powers that it currently wields over the operations of FCI and this, we believe, is a major hurdle (which we are tempted to say, currently appears insurmountable). Thus, much as we would like to be optimistic, it is on this count, that we do believe that reforming FCI is 'easier said than done'!

Elections and Procurement:

Although procurement is a result of MSP, it has been observed that procurement machinery is strengthened before elections to appease the farmers. The equations estimated in order to assess the impact of elections on procurement are:

$$\begin{aligned} \text{PROCW} = & \beta_1 \text{PROCW}_{T-1} + \beta_2 \text{DUM1} \\ & + \beta_3 \text{DUM2} + \beta_4 \text{DUM3} \\ & + \beta_5 \text{DUM45} + \beta_6 \text{DUM} \end{aligned} \quad \dots(11)$$

$$\begin{aligned} \text{PROCR} = & \beta_1 \text{PROCR}_{T-1} + \beta_2 \text{DUM1} \\ & + \beta_3 \text{DUM2} + \beta_4 \text{DUM3} \\ & + \beta_5 \text{DUM45} + \beta_6 \text{DUM} \end{aligned} \quad \dots(12)$$

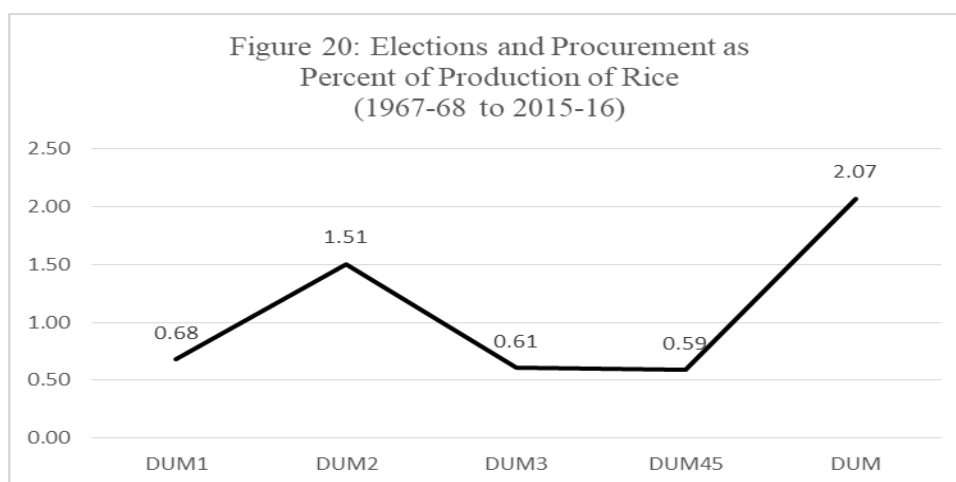
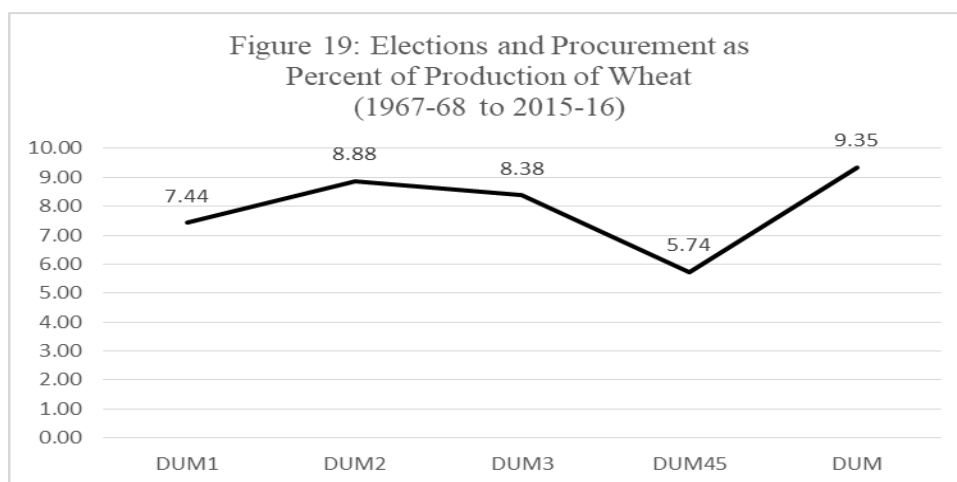
Where

PROCW: Procurement of wheat as a percentage of production

PROCR: Procurement of rice as a percentage of production

The results of the regressions are shown in the figures 7 and 8 below.

The coefficients from the models regressing estimated in equations (11) and (12) are plotted in figures 19 and 20 below:



The election dummy DUM shows an increase in case of both PROCW and PROCR with the coefficient being significantly larger for wheat (9.35) than for rice (2.07). This once again vindicates our hypothesis that elections have a significant impact on procurement for wheat and rice, with the impact being larger for wheat. Thus, like MSP, procurement too is used as tool by policy makers to appease the wheat growing farmers more than the rice growers.

An observation that we make for both the above graphs is that coefficient for DUM2, i.e., the second year after elections, is that it was seen to be high for both wheat and rice, although lower than the coefficient for the election year dummy variable (DUM).

The high level of the coefficient for wheat could be explained by the fact that the years 2001-02 and 2011-12 are captured in DUM2. Both these years recorded very high levels of procurement for rice and wheat. In 2001-02 wheat procurement touched a record high of 20.6 tones despite a fall in estimated production to 68.46 million tones (<http://indiabudget.nic.in/es2001-02/chapt2002/chap514.pdf>). In 2011-12 procurement was unusually high and crossed record levels. Punjab, Madhya Pradesh, Uttar Pradesh and Rajasthan have made significant procurement in 2011-12. (<http://pib.nic.in/newsite/PrintRelease.aspx?relid=72218>).

For rice, we find that the coefficient for procurement as percent of production was high for DUM2 on account of the years, i.e., 2001-02; 2006-07 and 2011-12. Procurement was seen to be at a record high in 2001-02, mostly led by states of Punjab and Haryana (<http://www.thehindubusinessline.com/2001/10/17/stories/071703b6.htm>). In 2006-07 the high procurement was due to higher production and a bonus of Rs 50 announced (https://www.google.com/url?hl=en&q=http://www.business-standard.com/article/markets/record-rice-procurement-likely-this-year-107031901064_1.html&source=gmail&ust=1506500568333000&usg=AFQjCNHfuU1EG5A0N5zo0zZ6e3isbFmdXw). In 2011-12 rice procurement touched a record high of 35.02 million

tones due to increased buying in non-traditional states like Chattisgarh and Bihar following all time high production (<http://economictimes.indiatimes.com/news/economy/agriculture/government-buys-record-35-mt-of-rice-from-farmers-in-2011-12/articleshow/16913545.cms>).

The other observation from the above graphs is that the coefficient for PROCW is the lowest for DUM45, (i.e., the pre election year). This occurs because it captures two years when production fell, i.e., 1974-75 and 1988-89. The sharpest decline in procurement of wheat has happened in 1974-75 (a quantity of only 1.9 million tons was procured against 4.5 million tons in the previous year). This was despite a sharp increase of Rs. 29 per quintal in procurement price (procurement price in 1974-75 was raised to 105 after it had remained fixed for six years at Rs. 76). In part, this decline in the procurement of wheat has been attributed to the drop in size of the crop and hence marketed surplus. The larger part of this decline reflected the failure of the system of procurement through a 50% levy on the traders. This led to malpractices and hoarding. To maximise procurement the inter-state movement of wheat on private account was banned and there was a reversion in the states of Punjab and Haryana to the system of pre-emptive purchases [Kahlon and Tyagi, 1989].

In case of rice too, the coefficient of DUM45 is seen to be at its lowest (0.59). Once again, the years 1974-75 and 1988-89 appear to be responsible for this. Low production can explain the lower procurement of rice in 1974-75 as was for wheat. It was floods in the months of September and October in 1988-99 in Punjab and Haryana which dislocated the market arrivals and hence procurement was low (<http://indiabudget.nic.in/es1988-89/5%20Prices%20Price%20Policy%20and%20Public%20Distribution%20System.pdf> - see para 5.10).

With the election year dummy (DUM) recording an increase in case of both MSP and procurement (as percent of production), our analysis in this section clearly points to the fact that both these instruments have been used tools

to appease the farming community (both rice and wheat farmers) and gain electoral mileage. The bias, however, seems to continue to be in favour of the wheat farmers.

7. Conclusion

Agricultural situation in India has undergone substantial change since the MSP was first introduced and hence an assessment of its impact in this changed environment acquires significance. This paper has attempted to assess the impact that MSP has, from an economic and political perspective.

Our study seems to suggest that MSP for wheat and rice does not appear to have fulfilled most of its stated objectives. The added problem that it has led to is that it has been biased in favour of a few States like Punjab and Haryana. These two States have consistently shown a positive impact of MSP on total production. This regional variation in its impact has led to distortions in cropping pattern, as rice and wheat have replaced coarse cereals with little regard for their impact on the use of available groundwater.

The election year manipulations of both, MSP and procurement makes it amply clear that policy decisions regarding both these instruments have often been guided, more by political than economic considerations.

Thinking ahead, we would like to observe that since policy decisions about MSP and procurement are inter-related, considering a simultaneous system of equations may be an interesting (and necessary) extension of the present study.

Having argued that the stated objectives of MSP are by and large not being fulfilled and that it has resulted in a large number of distortions, it is amply clear that the current system of MSP needs to be revisited and alternatives explored. Jha and Srinivasan [2006] have indicated that it would be more effective to explore alternative methods such as Deficiency Payments and the decentralisation of the procurement operations. Deficiency Payments would be made to farmers

when actual prices fall below a stated price floor. The decentralised procurement scheme is primarily aimed at providing a greater role for state governments and private traders, enhancing efficiency gains. It is felt that by encouraging States to take up procurement operations, the benefits of MSP would not be biased in favour of a few States, as has happened in the current scenario, but would accrue to farmers across States. Deshpande [2014] has suggested three alternatives which could be considered as either supporting or replacing the Minimum Support Prices. The first suggestion is the direct payment system or an income support scheme. The direct payment system involves compensating the income loss to the farmers due to price or yield collapse at the pre-decided price or market price during that year. The implementation process and modalities of this scheme are quite complex. The second suggestion is an income support linked insurance scheme for the farmers. Such schemes are under operation in many countries, especially Canada, France and US. However, a large surplus of grains is sold out of the regulated markets and, therefore, the scheme would become difficult for implementation. The third option relates to operations of Forward/Future markets through establishing commodity boards for various commodities. We do have the Forward Markets Act and Future Markets Regulation Act in place. If these are properly modified and utilised, possibly the situation in the price policy domain can be controlled. Niti Aayog [2017], the government think tank, which has replaced the erstwhile Planning Commission, too has recently suggested an alternative to the Minimum Support price. It has advocated that the "price deficiency payment" be initially be introduced for one or two crops in a few districts of the country. This approach will not require procurement and thereby prevent accumulation of unwanted stocks. It would also spread price incentives to producers in all the regions and to all the crops considered important for providing price support. (<http://www.asianage.com/india/all-india/170517/niti-aayog-plans-alternative-to-minimum-price-system.html>)

While it is true that the alternatives suggested above may have implementation issues, but having carried out a fairly detailed analysis of the impact of the MSP from an economic and political perspective, on balance we would say it may well be worth initiating some of these alternatives on a pilot basis. The current MSP regime has, we have argued (convincingly, we hope), proved to

be one which has not passed the litmus test on economic considerations and to make matters worse it is seen to be prone to election time manipulations. The 'political success' of the scheme can, however, only be assessed by studying the voters' response to these measures in the relevant elections.

APPENDIX A. Unit Root Test Results

ALL INDIA TIME SERIES

VARIABLE	Statistic	ORDER OF INTEGRATION
(1)	(2)	(3)
MSPW	-2.788 -0.202	I(1)
Δ MSPW	-3.747** -0.019	
MSPR	-3.387 -0.053	I(1)
Δ MSPR	-3.969** -0.0097	
RAIN	-4.112*** -0.006	I(0)
AGDCF	-2.217 (-0.480)	I(1)
Δ AGDCF	-5.030*** -0.0002	
PRODNR	-2.279 -0.445	I(1)
Δ PRODNR	-5.716*** 0	
PRODNR	-2.91 -0.159	I(1)
Δ PRODNR	-8.210*** 0	
WPIW	-2.163 -0.51	I(1)
Δ WPIW	-4.448*** -0.0018	
WPIR	-2.288 -0.44	I(1)
Δ WPIR	-4.294 *** -0.003	
CPI(IWF)	-1.65 -0.772	I(1)
Δ CPI(IWF)	-3.878** -0.013	

Note: All variables are log transformed
 Figures in parentheses indicate *p* values
 ***Indicates significance at 1%
 ** Indicates significance at 5%
 *Indicates significance at 10%

PANEL DATA (1995-96 TO 2010-11): Distortion in Cropping Pattern

Rice Group: West Bengal; Andhra Pradesh; Uttar Pradesh (inclusive of uttarakhand); Punjab; Odisha; Bihar (inclusive of Jharkhand); Madhya Pradesh (inclusive of chattisgarh); Tamil Nadu; Karnataka; Haryana

MSPR	-2.3203*** (0.01)	I(0)
ACOARSE	-1.88*** (0.03)	I(0)
YCOARSE(t-1)	-1.82*** (0.03)	I(0)
PCY_REAL	9.73 (1.00)	I(1)
Δ PCY_REAL	-4.91*** (0.00)	
RAIN_MARCH	-4.76 (0.00)	I(0)
DUM_DROUGHT	-6.69 (0.00)	I(0)

Note: All variables are log transformed
 Figures in parentheses indicate *p* values
 ***Indicates significance at 1%
 ** Indicates significance at 5%
 *Indicates significance at 10%

PANEL DATA (1995-96 TO 2010-11): Ground Water

Wheat Group: Punjab, Haryana, Rajasthan and Uttar Pradesh (inclusive of Uttarakhand)

VARIABLE	STATISTIC	ORDER OF INTEGRATION
(1)	(2)	(3)
MSPW	1.473*	I(0)
	-0.07	
AUCW	-2.981**	I(0)
	-0.0014	
YLDW(t-1)	-1.564*	I(0)
	-0.059	
PCY_REAL	5.311	I(1)
	-1	
ΔPCY_REAL	-2.698***	
	-0.0035	
ATUBE (wheat)	-3.127**	I(0)
	-0.0009	
ELEC (wheat)	-3.4552***	I(0)
	-0.0003	

Rice Group: Punjab, Haryana, Uttar Pradesh (inclusive of uttarakhand), Tamil Nadu and Karnataka

AUCR	-4.1375*** 0	I(0)
PCY_REAL	4.767 -1	I(1)
ΔPCY_REAL	-3.526*** -0.0002	
YLDR(t-1)	-1.8839** -0.0298	I(0)
MSPR	-1.6407** -0.0504	I(0)
ELEC (rice)	-4.4908*** 0	I(0)
ATUBE (rice)	-2.2436** -0.0124	I(0)

Note: All variables are log transformed

Figures in parentheses indicate p values

***Indicates significance at 1%

**Indicates significance at 5%

*Indicates significance at 10%

REFERENCES

- Acharya, S.S., 1999; 'Agricultural sector reforms for improved efficiency and equity' Institute of Development Studies, Jaipur. IDSJ working paper 109. https://openlibrary.org/works/OL1037566W/Agricultural_sector_reforms_for_improved_efficiency_and_equity (Viewed on 16-09-2017).
- Ali, S.Z, R.S. Sidhu and V. Kamal, 2012; 'Effectiveness of Minimum Support Price Policy for Paddy in India with a Case Study of Punjab' *Agricultural Economics Research Review*, Vol. 25, issue 2 <http://ageconsearch.umn.edu/record/137357/files/5-SZ-Ali.pdf> (Viewed on 17-09-2017).
- Bathla, S., 1997; 'Groundwater Sustainability: A case study of Ludhiana District' *Indian Journal of Agricultural Economics*, Vol. 52 No. 3.
- Baylisa K., M. E. Fulton and T. Reynolds, 2016; "The Political Economy of Export Restrictions: The Case of Vietnam and India" In A. Schmitz, P. Kennedy and T. Schmitz (ed) *Food Security in a Food Abundant World: An Individual Country Perspective* https://www.researchgate.net/publication/303242186_The_political_economy_of_export_restrictions_The_case_of_Vietnam_and_India (Viewed on 10-09-2017).
- Bhalla, S., 2014; "Where monetary policy is irrelevant", *Indian Express*, September 13. <http://archive.financialexpress.com/news/column-monetary-policy-irrelevant-for-inflation/1288418> (Viewed on 16-09-2017).
- Chand, R., 1999; 'Emerging Crisis in Punjab Agriculture: Severity and Options for Future', *Economic and Political Weekly*, Vol. 34, No. 13, A2-A10. <http://www.jstor.org/stable/4407788> (Viewed on 16-08-2017).
- Chand, R., 2003; 'Minimum Support Price in Agriculture: Changing Requirements', *Economic and Political Weekly*, Vol. 38, No. 29, <http://www.epw.in/journal/2003/29/commentary/minimum-support-price-agriculture.html> (Viewed on 16-09-2017).
- Chand, R. and T. Haque, 1998; 'Rice-Wheat Crop System in Indo-Gangetic Region-Issues Concerning Sustainability', *Economic and Political Weekly*, Vol. 33, No. 26, A108-112. <https://www.jstor.org/stable/4406933> (Viewed on 16-09-2017).
- Connell, P. Hirad, S. Hagi, and J. Nilufar, 2004; 'Indian Agriculture: Trends, Trade and Policy Reforms', *Australian Commodities: Forecasts and Issues*, Vol. 11, No. 4, <http://search.informit.com.au/documentSummary;dn=087140127597632;res=IELAPA> (Viewed on 16-08-2017).

- Crisil Report, 2014; cited in 'Agricultural Outlook in India' by NCAER http://agrioutlookindia.ncaer.org/events/Agrinews_April_2014.pdf. (Viewed on 16-09-2017).
- Das P. and A.T. George, 2017; 'Comparison of Consumer and Wholesale Prices Indices in India: An Analysis of Properties and Sources of Divergence' RBI Working Paper Series No. 05 <https://rbi.org.in/scripts/PublicationsView.aspx?id=17450>. (Viewed on 17-09-2107)
- Deshpande, R.S. and T. Raveendra Naika, 2002; Impact of Minimum Support Prices in the Agricultural Economy: A Study of Karnataka, Agricultural Development and Rural Transformation Unit Institute for Social and Economic Change Nagarbhavi, Bangalore. <http://www.isec.ac.in/41%20Impact%20of%20MSP%20on%20Agr.%20Eco%20Kar.pdf> (viewed on 08-12-2017)
- Deshpande, R.S., 2003a; 'Price Policy and Minimum Support Prices in Changing Agricultural Economy' in Bhaumik, S.K. (eds.) *Reforming Indian Agriculture: Towards Employment Generation and Poverty Reduction*, Sage Publications, New Delhi (2008) <http://shreeindia.info/rsdeshpande.com/wp-content/uploads/2014/03/MSP-Ch-06-Revised-Final.pdf> (Viewed on 16-09-2017).
- Deshpande, R.S., 2003b, 'Impact of Minimum Support Prices on Agricultural Economy (Consolidated Report)', Research Report No 89, ADRT Unit, Institute for Social and Economic Change, Bangalore. <http://www.isec.ac.in/40%20Impact%20of%20MSP%20on%20Agr.%20Eco%20Conso%20Rep.pdf> (Viewed on 16-09-2017).
- Deshpande R.S., 2003; 'Price Policy and Minimum Support Prices in Changing Agricultural Economy'. <http://shreeindia.info/rsdeshpande.com/wp-content/uploads/2014/03/MSP-Ch-06-Revised-Final.pdf> (Viewed on 16-09-2017).
- Dev, S.M., 2011; 'Macro and farm level investment in India: trends, determinants and policies' http://www.fao.org/fileadmin/templates/tci/pdf/India/Micro_and_farm_level_investment_in_India.pdf (Viewed on 14-09-2017).
- Dev, S.M. and N. Chandrasekhara Rao, 2010; 'Agricultural Price Policy, Farm Profitability and Food Security', *Economic and Political Weekly*, Vol. 45, Nos. 26 and 27 <http://www.indiaenvironmentportal.org.in/files/Agricultural%20Price%20Policy%20Farm%20Profitability.pdf> (Viewed on 16-09-017).
- Duxbury, J.M., 2001; 'Long term yield trends in the rice wheat cropping system: results from experiments and northwest India', *Journal of Crop Production* 3:27-52.
- Economic Survey, 2016-17; <http://indiabudget.nic.in/es2016-17/echapter.pdf> (Viewed on 15-09-2017)
- Gaiha, R. and Kulkarni 2005; 'Food grain surpluses, Yields and Prices in India', Global Forum on Agriculture November 2005. <http://www.oecd.org/tad/agricultural-policies/35752830.pdf> (Viewed on 16-09-2017).
- Gandhi, V.P., 2009; 'Ground Water Irrigation in India', www.iimahd.ernet.in/publications/data/2009-03-08Gandhi.pdf (Viewed on 16-09-2017).
- Ganesh-Kumar, A. Gulati, Ralph Cummings Jr., 2007; 'Foodgrains Policy and Management in India Responding to Today's Challenges and Opportunities'. <http://www.igidr.ac.in/pdf/publication/PP-056.pdf> (Viewed on 16-09-2017).
- Ganesh-Kumar, A. Gulati and Ralph Cunnings, 2008; 'Reforming Food grains management, Achieving Food Security with Cost-Effectiveness' <http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.334.515> (Viewed on 16-09-2017).
- Gulati, A. and P. Sharma, 1990; 'Prices, Procurement and Production: An Analysis of Rice and Wheat', *Economic and Political Weekly*, 25 (13). <http://www.jstor.org/discover/10.2307/4396099?uid=3738256&uid=2&uid=4&sid=21104605430107> (Viewed on 16-09-2017).
- GOI, 2001; Report on Census of Minor Irrigation Schemes (1993-94), Minor Irrigation Division, Ministry of Water Resources, New Delhi. <http://micensus.gov.in/> (Viewed on 16-09-2017).
- GOI, 2015; Report of the High Level Committee on Reorienting the Role and Restructuring of Food Corporation of India, Government of India, <http://fci.gov.in/report-publication.php?view=216> (Viewed on 25-09-2017)
- GOI, 2016; Evaluation report on efficacy of Minimum Support Prices (MSP) on farmers <http://www.indiaenvironmentportal.org.in/content/425067/evaluation-report-on-efficacy-of-minimum-support-prices-msp-on-farmers/> (Viewed on 16-09-2017).
- Government of Punjab; 2013; Agriculture Policy for Punjab http://www.indiaenvironmentportal.org.in/files/file/Draft_Agriculture_policy_punjab.pdf (Viewed on 16-08-2017).
- Gupta, N., 2010; Reserve Prices, Minimum Support Prices and Farmers' Revenues: Government Grain Policy through the Prism of Rice Auctions in North India, Delhi School of Economics, University of Delhi http://www.isid.ac.in/~pu/conference/dec_10_conf/Papers/NehaGupta.pdf Viewed on (17-09-2017).
- High Level Committee Report, 2015; Recommendations of High Level Committee on restructuring of FCI <http://pib.nic.in/newsite/PrintRelease.aspx?relid=114860>.

- Haynes, S.E. and Stone, J.A., 1989; 'An integrated test for electoral cycles in the U.S. economy', *The Review of Economics and Statistics*, Vol. 71, No. 3.
- Jha, S. and P.V. Srinivasan, 1999; 'Grain Price stabilization in India: Evolution of policy alternatives' *Agricultural Economics 21* <http://ageconsearch.umn.edu/bitstream/175101/2/agec1999v02i001a008.pdf> (Viewed on 16-09-2017).
- Jha, S. and P.V. Srinivasan, 2006; 'India - Reforming Farm Support Policies for Grains. Report prepared for IGIDR - ERS/ USDA Project: Indian Agricultural Markets and Policy' <http://www.igidr.ac.in/pdf/publication/PP-052.pdf> (Viewed on 16-09-2017).
- Jha, S. Srinivasan P.V. and M. Landes, 2007; Indian Wheat and Rice Sector Policies and the Implications of Reform Economic Research Report Number 41 https://www.ers.usda.gov/webdocs/publications/45802/11572_err41fm_1_.pdf?v=41056 (Viewed on 21-08-2017).
- Kahlon A.S. and D.S. Tyagi, 1989; *"Agricultural Price Policy in India"*, Allied Publishers Limited, New Delhi.
- Kannan, E. and Sujata Sundaram, 2011; 'Analysis of Trends in India's Agricultural Growth' <http://www.environmentportal.in/files/file/Analysis%20of%20Trends%20in%20India%E2%80%99s%20Agricultural%20Growth.pdf> (Viewed on 16-09-2017).
- Kataki, P. Hobbs, P. and Adhikary, 2001; 'Rice - Wheat cropping system of South Asia', *Journal of Crop Production*, Vol. 3, Issue 2.
- Krishna R. and A. Chhibber, 1983; 'Policy modelling of a dual grain market: the case of wheat in India', Research Report 38. Washington, D.C.: *International Food Policy Research Institute Research*, <http://ebrary.ifpri.org/cdm/ref/collection/p15738coll2/id/126074> (Viewed on 16-09-2017).
- Lahiri, A., 2014; "Don't blame MSP for Inflation" Indian Express, October 7th, 2014. <http://indianexpress.com/article/opinion/columns/don't-blame-msp-for-inflation/> (Viewed on 16-06-2016)
- Lalvani, M., 1999; 'Elections and Macro policy signals: Political Budget Cycle Hypothesis', *Economic and Political Weekly*, Vol. 34 No. 37, <http://www.jstor.org/stable/4408401> (Viewed on 16-09-2017).
- Mahambare, V. and S. Bhalla, 2013; "Is CPI a better inflation indicator than WPI?" Financial Express, October 2, 2013. <http://www.financialexpress.com/archive/is-cpi-a-better-inflation-indicator-than-wpi/1176955/> (Viewed on 17-09-2017)
- Meenakshi, J.V. and A. Banerji, 2004; 'Buyer Collusion and efficiency of Government Intervention in wheat markets of Northern India: An asymmetric structural auctions analysis' *American Journal of Agricultural Economics*, Vol. 86, No. 1, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=513313 (Viewed on 16-09-2017).
- Mitra, A., 1977; *Terms of Trade and Class Relations: An Essay in Political Economy*, Frank Cass and Co. Ltd., U.K.
- Mythili, G., 2006 'Supply Response of Indian Farmers: An Analysis of Pre- and Post-Reform Periods', Working Paper WP-2006-009, Indira Gandhi Institute of Development Research, Mumbai. http://saber.eaber.org/sites/default/files/documents/IGIDR_Mythili_2006.pdf (Viewed on 16-09-2017).
- Pandey, R., 2014; 'Groundwater Irrigation in Punjab: Some Issues and Way Forward' Working Paper No. 2014-140 http://www.nipfp.org.in/media/medialibrary/2014/09/WP_2014_140.pdf (Viewed on 16-08-2017).
- Parikh, K.S., A. Ganesh-Kumar, and G. Darbha, 2003; "Growth and Welfare Consequences of Rise in MSP", *Economic and Political Weekly* (Mumbai), March 1, 2003. <http://www.epw.in/journal/2003/09/special-articles/growth-and-welfare-consequences-rise-msp.html> (Viewed on 21-08-2017).
- Parikh, J. and C. Singh, 2007; 'Extension of MSP Fiscal and Welfare Implications' http://planningcommission.nic.in/reports/sereport/ser/ser_msp.doc (Viewed on 16-09-2017).
- Rashid, S. S. Mahendra Dev, M. Thomas and A. Gulati, 2005; 'Reforming Food Price Policies in India: Rationales and Distributional Effects'. Unpublished manuscript, Washington DC: IFPRI
- Raghavan, M., 2004; 'Politics of procurement and price support', *Economic and Political Weekly*, Vol. 39, No. 5, <http://www.jstor.org/stable/4414587> (Viewed on 16-09-2017).
- Ramaswamy B., S. Sheshadri and K.V. Subramanian, 2014; 'A Framework for Analysing Food Policy in India', <https://drive.google.com/file/d/0B0Vt6boOqIsTWtnaHhxaEdyaU0/edit> (Viewed on 16-07-2017).
- Rao, V.M., 2001; 'The Making of Agricultural Price Policy Journal of Indian School of Political Economy' www.ispepune.org.in/PDF%20ISSUE/2001/jispe101/103RAO.PDF (Viewed on 16-09-2017).
- RBI, 2014; 'Analytics of Food Inflation in India' <https://rbi.docs.rbi.org.in/rdocs/Publications/PDFs/WPS10AFI131014FL.pdf> (Viewed on 16-09-2017).
- Repetto, R., 1994; 'The "second India" revisited: Population, Poverty and Environmental stress over two decades. Washington D.C: World Resources Institute.

- Rodell, M., 2009; 'Satellite-based estimates of groundwater depletion in India' <http://www.nature.com/nature/journal/v460/n7258/abs/nature08238.html> (Viewed on 16-09-2017).
- Sasmal, J., 2016; "Resources, Technology and Sustainability: An Analytical Perspective", Springer, Singapore.
- Shah, T., J. Burke and K. Villholth, 2007; *Groundwater: a global assessment of scale and significance*, in: *Water for Food, Water for Life*, edited by: Molden, D., Earthscan, London, UK and IWMI, Colombo, Sri Lanka.
- Shergill, H.S., 2005; 'Wheat and paddy cultivation and the question of optimal cropping pattern for Punjab' http://www.global.ucsb.edu/punjab/sites/secure.lsit.ucsb.edu/gisp.d7_sp/files/sitefiles/journals/volume12/no2/12.2_Shergill.pdf (Viewed on 16-09-2017).
- Siddhu, R.S et. al., 2010; 'Conservation Agriculture in Punjab - Economic Implications of technologies and Practices' *Indian Journal of Agricultural Economics* - Vol 65, No. 3, <http://ageconsearch.umn.edu/bitstream/204693/2/08-R.S%20sidhu.pdf> (Viewed on 16-09-2017).
- Suhag, R., 2016; 'Overview of Ground Water In India' <http://www.prsindia.org/administrator/uploads/general/1455682937~Overview%20of%20Ground%20Water%20in%20India.pdf> (Viewed on 16-09-2017).
- Tyagi, D., 1990; *Managing India's Food Economy Problems and Alternatives*. New Delhi: Sage Publications. World Bank, (2005). India: India's Water Economy, Bracing for a Turbulent Future. Washington, D.C, World Bank. <http://openknowledge.worldbank.org/handle/10986/8413> (Viewed on 16-09-2017).

Data Sources:

- (i) Department of Agriculture Co-operation and Farmer Welfare: <http://agricoop.nic.in/agristatistics.htm>
- (ii) Food Corporation of India <http://fciweb.nic.in/>
- (iii) Department Of Food and Public Distribution <http://dfpd.nic.in/>
- (iv) Commission of Agricultural Costs and Prices: <http://cacp.dacnet.nic.in/>
- (v) RBI: <http://rbi.org.in/scripts/AnnualPublications.aspx?head=Handbook%20of%20Statistics%20on%20Indian%20Economy>
- (vi) RBI: <https://www.rbi.org.in/Scripts/PublicationsView.aspx?id=15830>
- (vii) Annual Reports on the Working of State Electricity Boards and Electricity Departments: http://planningcommission.gov.in/reports/genrep/annrep.php?repts=b_annrep.htm
- (viii) Ministry of Power: <http://powermin.nic.in/en/content/annual-reports-year-wise-ministry>
- (ix) India Stat: www.indiastat.com

DEMONETISATION AND INDIAN ECONOMY: SOME MACROECONOMIC CHALLENGES

Santosh Kumar Das and Pradyuman Singh Rawat

The macroeconomic implications of the "Demonetisation" exercise has been studied on three board parameters of growth, distributional consequences, and the challenges it brought in for the Banking Sector. Concomitantly, an attempt has been made to evaluate the extent to which the stated objectives behind this exercise are justified. We found that it is beyond dispute as far as the immediate impact on growth is concerned. Given the size of the informal economy and the fact that India has been a cash driven economy, contraction in output during 2016-17 fiscal was inevitable. Other than the growth challenge, the Demonetisation exercise throws a far more important challenge bearing distributional consequences. The new interest rate regime that emerged during the post demonetisation period is likely to benefit some while leaving a large chunk of population worse off. Finally, the banks will find it difficult to manage the liquidity surge in the system. With increase in deposit growth and a decline in credit growth, it would be difficult for banks to manage their liabilities. The evaluation of its stated objectives suggests that it does not justify such a mammoth exercise, which is cost intensive and bears serious adversarial economic consequences. We have not endeavoured to examine the likely/claimed long term gains from the Income Tax authorities being able to track the addresses of the currency which has flowed into the banking system.

Keyword: Demonetisation, Economic Growth, Indian economy, Banking Sector.

I. INTRODUCTION

On November 8, 2016, the Government of India announced the Demonetisation of notes of Rs. 500 and Rs.1000 denominations. Curbing black money and counterfeit notes were cited as the reasons behind the above exercise.¹ There cannot be any denial of the adverse impact of black economy or money and counterfeit notes on the economy. Any exercise that guarantees eradication of black economy or money is certainly helpful for the economy. However, the question remains as to whether the Demonetisation exercise can be able to eradicate black money as claimed in the RBI and Government of India Gazette notifications (see foot note 1). Even on earlier two occasions, Demonetisation of high value notes over Rs. 100 denomination in January 12, 1946 and January

16, 1978, containing black money was also cited as the prime objective of the exercise [Lahiri, 2016]. It is to be seen to what extent the counterfeit notes pose a threat to the economy and whether it calls for such action.

To understand the effects of Demonetisation exercise, it becomes necessary to understand the role of cash in a developing economy like India. Typically, there are four types of financial transactions that take place in an economy - accounted transactions, unaccounted transactions, transactions belonging to the informal sector and illegal transaction [NIPFP, 2016]. The first two categories of transactions concern reporting to tax authorities for tax purposes. While the accounted transactions are reported for tax purposes, the unaccounted transactions are not. A significant number of transactions in the informal sector, excluding professionals and businesses in the unorganised sector, the latter being subject to both direct and indirect taxation,

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involves individuals or agents whose income falls below the exemption threshold, and therefore, do not have any tax liability. This is the sector which largely lives and works on cash as in this sector considerable part of the income is earned in cash and spent in cash [NIPFP, 2016]. And the illegal transactions involve financing or paying for illegal activities.

With about 86 percent of the currency (in value terms) in circulation ceased to exist, and given the importance of cash in a developing economy like India, the economic consequences of the Demonetisation announcement of November, 2016 will be manifold. This will have implications for the economy both in the short run, which is immediate in nature and in the medium term in terms of its impact on consumption, investment, production and employment generation, etc. Changes in all the above macroeconomic indicators would be reflected in the growth outlook of the Indian economy, both in the short term and medium term. While the advocates of the Demonetisation exercise acknowledge that in the short run it may result in slowing down of the economy in the quarter following the announcement, however, recovery would be quick and in the long term it is beneficial for the economy and it would boost economic growth in India. On the other hand, those who are critical of the above exercise argue that the disruption caused due to the above exercise is likely to contract the economic activities for a longer time period. The Demonetisation exercise is also likely to throw tough challenges bearing distributional consequences due to the likely emergence of a new interest rate regime, with a sharp decline in the deposits rates. From the side of banking system, it would be very challenging for the banks to manage the surged liquidity in the system in the form of deposits which in any way is a liability on the banking system as a whole.

The paper attempts to provide an overview of the dimensions of the Demonetisation exercise announced on November 8, 2016 and explores to what extent the above exercise is justified in terms of its stated objectives. Concomitantly, it would also attempt to explore the macroeconomic implications of the demonisation exercise in India. The macroeconomic implications have been examined on the parameters of economic growth, distributional challenges and impact on the banking sector in India. Section I provide a background and lays out the objectives. The dimensions of the Demonetisation exercise announced on November 8, 2016 have been presented in section II. Section III, provides an overview of the size of the black economy in India and the cash component of the black economy, and to what extent the Demonetisation exercise is likely to be effective in curbing the black economy or money. Section IV discusses the effectiveness of the Demonetisation exercise in addressing the issue of counterfeit notes in India. The macroeconomic implications of the "Demonetisation" exercise have been discussed in Section V. It includes the impact of the Demonetisation exercise in terms of its effect on the growth dynamics of the Indian economy, distributional consequences and challenges for the banking sector. Section VI provides the concluding remarks.

II. DIMENSIONS OF DEMONETISATION

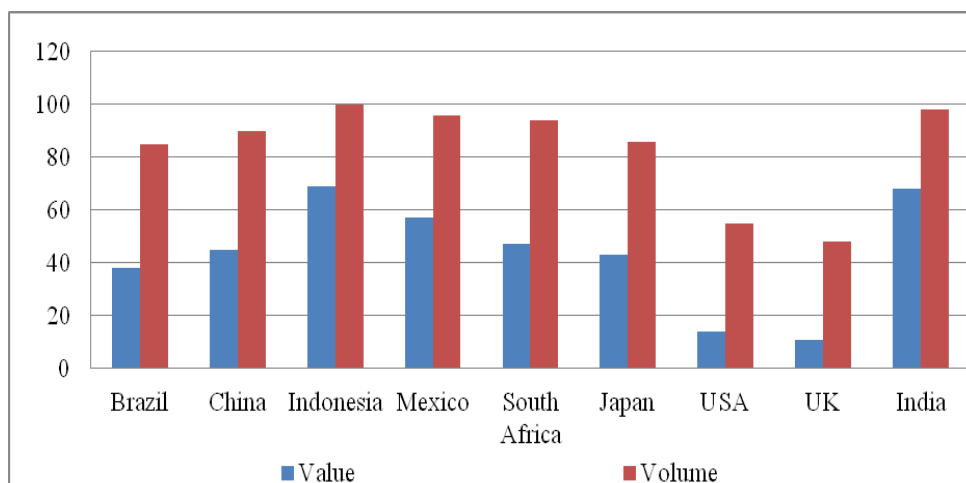
With the Demonetisation of notes of Rs. 500 and Rs. 1000 denominations, effectively more than 86 percent of currency in circulation in value term has ceased to be legal tender (Table 1). As on March 2016, notes of Rs. 500 and Rs. 1000 denominations constituted 47.8 percent and 38.6 percent, respectively, of the total currency notes in circulation. At the end of March 2016, the value of bank notes in circulation was Rs. 16,415 billion showing an increase of 14.88 percent as against 11.4 percent in the year 2014-15. It can be observed that the share of high denominated currencies have grown over time. The growth of

volume of currency in circulation in value term signifies the importance of cash in an economy like India. The Demonetisation of high value notes has resulted in cash shortage, given the pace of re-monetisation (see section on banking below) impacting various spheres of economic activities.

Table 1. Cash in Circulation

Deno- mination	Volume						Value					
	In Million Pieces			% Share in Total			In Rs. Billion			% Share in Total		
	2014-1 5	2015-1 6	2016-1 7	2014-1 5	2015-1 6	2016-1 7	2014-1 5	2015-1 6	2016-1 7	2014-1 5	2015-1 6	2016-1 7
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2 & 5	11672	11626	11557	13.9	12.9	11.5	46	45	45	0.3	0.3	0.3
10	30304	32015	36929	36.3	35.5	36.8	303	320	369	2.1	1.9	2.8
20	4350	4924	10158	5.2	5.4	10.2	87	98	203	0.6	0.6	1.5
50	3487	3890	7113	4.2	4.3	7.1	174	195	356	1.2	1.2	2.7
100	15026	15778	25280	18	17.5	25.2	1503	1578	2528	10.5	9.6	19.3
500	13128	15707	5882	15.7	17.4	5.9	6564	7854	2941	46	47.8	22.5
1000	5612	6326	89	6.7	7	0.1	5612	6326	89	39.3	38.6	0.7
2000	..	..	3285	..	..	3.3	..	..	6571	..	..	50.2
Total	83,579	90,266	100,293	100.00	100.00	100.10	14,289	16,416	13,102	100.00	100.00	100.00

Source: Reserve Bank of India: Annual Report 2017

Figure 1. Consumer Transactions Carried Out in Cash in 2015 in Volume and Value Terms (as percent of Volume and Value of Total Consumer Transactions)

The importance of cash in high value denominations is beyond dispute given the fact that India is largely a cash driven economy (Figure 1). Consumer transaction carried out with cash is significantly high in India compared to several other developing and developed countries. About 98 percent of transactions in terms of volume and about 68 percent in terms of value are carried out with cash.

III. BLACK ECONOMY AND DEMONETISATION

Several estimates conducted by different agencies and researchers confirm that the size of the black economy in India is growing. A report prepared by the National Institute of Public

Finance and Policy (NIPFP) for the Ministry of Finance in December 2013 suggested that the size of the black economy could constitute about 75 percent of the Gross Domestic product (GDP) of the country [Ghandy, 2016, Pp. 28-30]. The size of the black economy in India has grown in size from 4.5 percent of GDP as estimated by Kaldor in 1956 to as substantial as 75 percent of GDP as suggested in the NIPFP report. There have been several estimates of the size of the black economy in India, which includes estimates by Wanchoo Committee in 1970, Chopra in 1982, NIPFP in 1985, Basu in 1995 and Kumar in 1999 (Table 2).

Table 2. Estimates of Black Economy in India (Using Fiscal Approach)

Year	Black Economy / GDP	Estimated By
(1)	(2)	(3)
1956	4.5	Kaldor (1956)
1970	7	Wanchoo Committee (1970)
1976-77	10.2	Chopra (1982)
1980-81 to 1983	18 to 21	NIPFP (1985)
1980-81	15	Basu (1995)
1990-91	35	Kumar (1999)
1995-96	40	Kumar (1999)
2013	75	NIPFP (2013)

Source: Kumar [2016] & Ghandy [2016]

Recent estimates of the size of black economy have been provided by NIPFP [Ghandy, 2016] and Kumar [2016, Pp. 36-42]. Recent estimates by Kumar [2016] suggest that in 2012, the size of the black economy constituted more than 62 percent of the GDP (Table 3). While the size of

the black economy is alarming as it constitutes more than three fifth of the GDP, the rate of growth of black economy also poses a serious concern. Between 1996 and 2012, black GDP grew at an average rate of 18 percent per annum.

Table 3. Size and Growth of the Black Economy: 1996-2012

Year	Size of Black Economy (%)	Black GDP (Rs. Crore)	Growth of Black GDP (%)
(1)	(2)	(3)	(4)
1996	32.05	1419277	
1997	34.62	1572394	19.66
1998	36.70	1803378	21.57
1999	40.07	2023130	22.49
2000	41.59	2177413	11.72
2001	42.69	2355845	11.05
2002	45.24	2536327	14.10
2003	44.00	2841503	8.96
2004	46.56	3242209	20.73
2005	46.79	3693369	14.48
2006	47.72	4294706	18.60
2007	48.86	4987090	18.89
2008	53.87	5630063	24.48
2009	53.74	6477827	14.78
2010	55.72	7784115	24.59
2011	58.45	9009722	21.41
2012	62.02	10113281	19.10

Source: Kumar (2016); estimated with a common uniform methodology developed by the author, applied to all years.

In value term, the size of black economy in 2012 stood at Rs. 101 lakh crore and as per the NIPFP report estimate, 75 percent of black economy would be about Rs. 120 lakh crore [Ghandy, 2016]. While the size of black economy in value terms is huge by any estimate, the Demonetisation move that ceased the legal tender of Rs. 500 and Rs. 1000 denominations, amounting to Rs. 14.2 lakh crore in value terms, seems to be too small in comparison with the total estimated black money in the country though not in comparison with the total value of currency in circulation at the time. However, the fact remains that the cash component of black economy has been very low. The Finance Ministry's "White Paper on Black Money" [2012] suggests that the component of cash to the "total undisclosed income admitted" was found to be in the range of 3.7 percent to 7.4 percent (Table 4). The Special

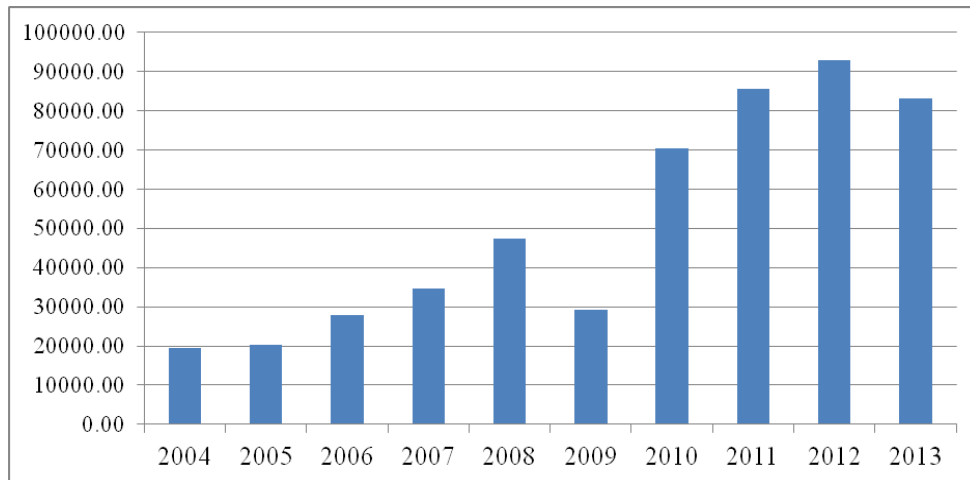
Investigation Team (SIT) set up by the Government of India in 2014 estimated the black money in the form of currency in circulation to be of the order of 13 percent of the GDP. Most possibly, the bulk of the unaccounted money is invested in real estate and gold within the country. In 2011-12, the volume of total admitted by undisclosed income stood at Rs. 9289 crore which is quite insignificant in comparison to Rs. 101 lakh crore, the size of the estimated black economy in India for the same year. Therefore, effectively, the major chunk of black money has been stored in the form of gold, real estate, financial investment and cash held abroad [as discussed in Ghandy, 2016]. The cash held abroad is quite evident from the fact that between 2004 and 2013, about Rs. 40 Lakh crore was drained off abroad through illegal transaction, averaging Rs. 3.3 lakh crore per year as per the Global Financial Integrity Report [Ghandy, 2016].

Table 4. Cash Component of Seized Asset Value and Undisclosed Income

Year	Cash Component in Total Assets Seized (Rs. Cr)	Value of Total Seized Assets (Rs. Cr)	Total Undisclosed Income Admitted (Rs. Cr)	Percentage of Cash to Total Undisclosed Income
(1)	(2)	(3)	(4)	(5)
2006-07	187.48	364.64	3612.89	5.19
2007-08	206.35	427.82	4160.58	4.96
2008-09	339.86	550.23	4613.06	7.37
2009-10	300.97	963.50	8101.35	3.72
2010-11	440.28	774.98	10649.16	4.13
2011-12	499.91	905.61	9289.43	5.38

Source: White Paper on Black Money, Ministry of Finance Govt. of India 2012

As per the Global Financial Integrity Report 2015, India ranks fourth in the illicit financial outflow category with cumulative outflow of US \$510.29 billion after US \$1392.28, China, US \$1049.77, Russia, and Mexico US \$528.44. Between 2004 and 2013, the illicit financial flow from India averaged at US \$51.028 billion per year (Figure 2). The cumulative outflow of US \$510.28 billion between 2004 and 2013 would be equivalent to Rs. 3.46 lakh crore² in Indian currency. The money is illegally transferred to off-shore tax heavens to avoid taxes. One of the important factors responsible for acceleration in outflow of money from domestic economy is the initiation of financial liberalisation and deregulation measures in the country.

Figure 2. Illicit Financial Flow from India: 2004-13 (US\$ Million)

Source: Global Financial Integrity Report, 2015.

As argued by Sundarm and Pandit [1976, Pp. 121-132], given the fact that black liquidity is usually stored in the form of gold, other precious metals and also in real estate, it is, immune to demonetisation. They further argue that black money can be reduced overtime through changes in the structure of the economy, as it is structurally determined. If corruption, which is systemic, is not addressed, the exercise may end up in the new black money driving out the old ones [Dasgupta, 2016, Pp. 67-71]. That is, if corruption is not contained through other systemic reforms, even if demonetisation succeeds in containing some part of it, eventually there will be black money in the system again as this exercise is not enough to prevent creation of new black money in the economy.

IV. COUNTERFEIT CURRENCY AND DEMONETISATION

There is no definite way to measure the volume of counterfeit currency notes in circulation. A study conducted by the Indian Statistical Institute, Kolkata, for the National Investigation Agency in 2015 suggests that the counterfeit currency seized between 2012 and 2015 amounted to nearly Rs.

147 crore, which amounts to Rs. 37 crore per year (Ghandy, 2016). As per the RBI figures, 932926 pieces of counterfeit currencies were detected during the financial year 2015-16 which is less than 0.1 percent of the total pieces of currency notes in circulation [RBI, 2016]. In value term, the total volume of counterfeit notes detected during 2015-16 was Rs. 29.7 crore, which is 0.002 percent of the total value of currency in circulation (Table 5). It is true that bulk of the counterfeit notes detected in terms of value and number of pieces happen to be currency notes of high denomination, Rs. 500 and Rs. 1000. During 2015-16, 261695 pieces of counterfeit note of denomination Rs. 500 and 143099 pieces of counterfeit note of denomination Rs. 1000 were detected by the banking system. In value terms, the above noted counterfeit notes amounted to Rs. 13.09 crores of counterfeit notes in denomination of Rs. 500 and Rs. 14.31 cores of counterfeit note in denomination of Rs. 1000. However, as noted earlier, the volume of the detected counterfeit notes is minuscule relative to the volume of currency in circulation.

Table 5. Counterfeit Currency Detected during 2015-16

Denomination	Counterfeit Notes	Notes in Circulation (million)	Counterfeit (%)	Counterfeit Value (Rs)	Total Currency Value in Circulation (Rs. Crore)
(1)	(2)	(3)	(4)	(5)	(6)
2,5	2	11626	0	7	4069.1
10	134	32015	0	1340	32015
20	96	4924	0	1920	9848
50	6453	3890	0.0000017	322650	19450
100	221447	15778	0.000014	2.21 crore	157780
500	261695	15707	0.0000167	13.09 crore	785350
1000	143099	6326	0.0000226	14.31 crore	632600

Note: Assuming number of Rs. 2 and Rs. 5 notes to be equal

Source: Calculations based on data from Annual Report 2016 of the RBI.

A similar view with respect to the dimensions of counterfeit notes emerges even if we go beyond a particular year by examining the movement of counterfeit notes for a time period. As shown in the table below, the average of 56.74 billion pieces of Notes in Circulation over the period from 2007-08 to 2010-11, it is about 6.9 pieces counterfeit notes per million Notes in Circulation (Table 6). However, it may not be a correct estimate as we do not have a fair idea of the actual incidence of fake notes that remained floating and undetected in the system. While the flow of

recovery as well as seizure of counterfeits is directly observable, the stock of counterfeits cannot be measured directly. The fact remains that benefit in both qualitative and quantitative terms is to be measured while making the counterfeit currency note as one of the reasons for "demonetisation", as the volume of detected counterfeit notes and studies conducted to estimate the size of counterfeit notes tend to suggest that it constitutes a minuscule portion of the total currency in circulation.

Table 6. Counterfeit Notes: 2007-16

Items	2007-08	2008-09	2009-10	2011-12	2012-13	2013-14	2014-15	2015-16	Average
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Notes in circulations (million pieces)	44225 (-11)	48963 (-10.7)	56549 (-15.5)	64577 (-14.2)	69382 (-7.4)	77330 (11.46)	83579 (8)	90266 (8)	66858.88 (-3.91)
Notes in circulations of higher denomination (Rs. 100 and above, million pieces)	20131 (-2)	21788 (-8.2)	23509 (-7.9)	25957 (-10.4)	27844 (-7.2)	31251 (12.24)	33766 (8.05)	37811 (11.98)	27757.13 (-0.43)
Counterfeit note detected (no. of pieces)	195811 (86.9)	398111 (13.3)	401476 (-0.8)	435607 (-8.5)	521155 (-19.6)	488273 (-6.31)	594446 (21.74)	632926 (6.47)	458475.63 (-24.65)
Counterfeit note per million	4.4	8.1	7.1	6.7	7.51	6.31	7.11	7.01	6.78
Counterfeit notes vis a vis million of higher denomination notes	9.7	18.3	17.1	16.8	18.2	15.62	17.60	16.74	16.26

Source: Calculations based on data from Annual Report of the RBI, various years. Year on year growth in percentage given in parentheses.

V. DEMONETISATION AND ITS MACROECONOMIC IMPLICATIONS

The macroeconomic implications of the "Demonetisation" exercise announced on November 8, 2016, can be manifold. With about 86 percent of the currency in circulation in value terms ceasing to exist, and given the fact that India is largely a cash driven economy with a sizeable informal sector; the above move is bound to throw macroeconomic challenges in different forms. In this section, three major macroeconomic challenges, which originate from the above exercise, are discussed. These are: (i) its implication for economic growth through its impact on major growth drivers, (ii) distributional implications due to the emergence of a new interest rate regime or a one-off temporary decline in interest rates,³ and (iii) challenges for the banking sector in terms of managing surge in liquidity due to deposit growth, which is a liability on the banking system.

V (i) Implication for Growth

Due to demonetisation, there will be disruptions in economic activities, both short term and long term. Largely, economic consequences in the short run can be divided into two parts - (i) disruptions in the day to day activities of the people and (ii) shock leading to contractions in consumption, trading and household income which has growth implications [Rajkumar and Shetty, 2016, Pp. 13-18]. While Dasgupta [2016] presents theoretical arguments about how the currency holding is likely to influence aggregate demand and aggregate supply and channels like prices and exchange rates in the context of the IS-LM frame work, we are largely focusing on the growth drivers. In its Monetary Policy statement, the RBI stated that in the short run the economy would face the slow down as the major sectors of the economy are affected by it and it is

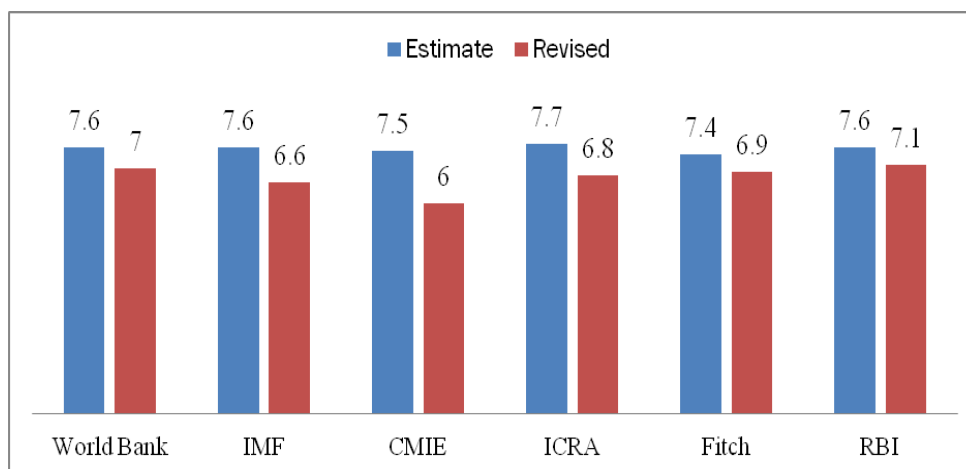
difficult to measure the long-term growth implication at present due to uncertainties caused thereby [Kumar, 2017, Pp. 14-17]. To quote from the RBI [2016] Statement, "The outlook for GVA growth for 2016-17 has turned uncertain after the unexpected loss of momentum by 50 basis points in Q2 and the effects of the withdrawal of SBNs which are still playing out. Downside risks in the near term could travel through two major channels: (a) short-run disruptions in economic activity in cash-intensive sectors such as retail trade, hotels & restaurants and transportation, and in the unorganised sector; (b) aggregate demand compression associated with adverse wealth effects. The impact of the first channel should, however, ebb with the progressive increase in the circulation of new currency notes and greater usage of non-cash based payment instruments in the economy, while the impact of the second channel is likely to be limited". In the long run, due to over capacity, (which had already developed prior to demonetisation) firms may cut down investment and perhaps employment; which may result in a decline in demand. As such, the impact of this disruption shall also be felt in the decline in economic growth. It is estimated that the contribution of unorganised sector activity in GDP happens to be to the extent of 45 per cent where transactions are mainly conducted in cash [see Kumar, 2017]. It is therefore, likely that this sector will be the most affected by demonetisation.

Post demonetisation, the World Bank has lowered country's growth estimates for this fiscal to 7 per cent from its earlier estimates of 7.6 per cent made in June last year (Figure 3). As per the 'Global Economic Prospects' report released by the World Bank, "growth in India is estimated to reach 7 per cent in financial year 2016-17... reflecting a modest downgrade in India's expansion". The American rating agency Fitch

has also downgraded the country's growth outlook to 6.9 percent for 2016-17 from an earlier estimate of 7.4 per cent citing the short term disruption caused by demonetisation. The International Monetary Fund (IMF) too reduced the growth forecast to 6.6 percent for the current financial year ending March 2017 due to cash shortage. The agency also reduced the growth

figures for the financial year 2017-18 to 7.2 percent, from its earlier forecast of 7.6 percent for the same year. As per the Central Statistics Organisation (CSO) estimate, the growth impact of cash shortage would vary between 0.7 and 1.3 percent depending on the duration of cash shortage [Lahiri, 2016].

Figure 3 Revised Growth Estimates for India for 2016-17 Post Demonetisation (GDP growth in %)



Source: Economic Survey, 2016-17; International Monetary Fund: World Economic Outlook, 2017; World Bank: Global economic Prospects, 2016.

In view of declining growth estimates as projected by several international and national agencies, it becomes imperative to study the implication of the Demonetisation exercise for economic growth in India. This can be done by exploring how the Demonetisation exercise is likely to impact the major growth drivers of the economy. The exploration of the effects of Demonetisation on the growth drivers would help

us in understanding the growth dynamics of the Indian economy for the post-Demonetisation period.

Demonetisation and Growth Drivers

The growth implications of the Demonetisation exercise can be analysed in terms of its effect on the major drivers of economic growth. From

the demand side analysis of aggregate demand, broadly there can be three major drivers of growth. These are: (i) consumption expenditure - both government and private, (ii) capital formation, which is investment, and (iii) net exports, that is, value of exports minus imports. It is to be analysed as to what Demonetisation implies for the major drivers of economic growth.

Table 7. Growth Rate of GDP and its Components in percent (at constant prices)

Component	2012-13	2013-14	2014-15	2015-16	2016-17
(1)	(2)	(3)	(4)	(5)	(6)
Government final consumption	0.5	0.4	12.8	2.2	23.8
Private final consumption	5.3	6.8	6.2	7.4	6.5
Gross fixed capital formation	4.9	3.4	4.9	3.9	-0.2
Change in stocks	-3.8	-18.6	20.3	5.5	5.2
Valuables	2.6	-42.2	15.4	0.3	-33.5
Exports of goods and services	6.7	7.8	1.7	-5.2	2.2
Imports of goods and services	6.0	-8.2	0.8	-2.8	-3.8
GDP	5.6	6.6	7.2	7.6	7.1

Source: Economic Survey, 2016-17

The components of the GDP suggest that in recent years, growth has been sustained to a large extent by both the government and private consumption (Table 7). There has been a decline in the growth rate of investment in the economy. During the financial year 2016-17, GFCF recorded a negative growth rate of -0.2 percent. In a scenario of negative growth of investment, economic growth has been sustained by high consumption growth. It is quite evident from the quarterly figures as presented in the table below

(Table 8). The quarterly growth figures of major growth drivers suggest that investment growth has been sluggish beginning with Quarter 1 of the financial year 2015-16. Since then, on four occasions, including in the first two quarters of 2016-17, the investment growth has been negative. On the other side, the growth of government consumption has been quite high during the first two quarters of 2016-17 and became negative during the last two quarters of the financial year 2016-17.

Table 8. Growth of Drivers of Gross Domestic Product: Quarterly (at market prices, Base year 2011-12, constant prices)

Year/Quarter	PFCE	GFCE	GFCF
(1)	(2)	(3)	(4)
2011-12Q2	-9.26	25.95	-1.07
2011-12Q3	12.55	-14.30	-1.03
2011-12Q4	1.23	30.09	7.00
2012-13Q1	-4.94	-19.79	-5.93
2012-13Q2	2.30	24.51	2.44
2012-13Q3	10.13	-33.93	2.86
2012-13Q4	-2.76	41.73	13.43
2013-14Q1	-2.55	0.71	-12.57
2013-14Q2	0.13	3.50	5.48
2013-14Q3	13.16	-29.63	0.32
2013-14Q4	-1.93	17.72	5.41
2014-15Q1	-2.62	27.16	-2.92
2014-15Q2	1.08	9.59	-0.44
2014-15Q3	5.19	-18.81	1.81
2014-15Q4	2.93	-14.53	7.07
2015-16Q1	-2.28	31.23	-1.30
2015-16Q2	0.47	13.41	1.96
2015-16Q3	7.07	-19.00	-6.08
2015-16Q4	3.00	-14.64	3.78
2016-17Q1	-3.68	51.56	-2.50
2016-17Q2	1.25	9.98	-0.65
2016-17Q3	11.18	-14.97	2.43
2016-17Q4	3.78	-6.63	2.60
2017-18Q1	-9.08	29.43	0.92

Note: PFCE - Private Final Consumption Expenditure, GFCE - Govt. Final Consumption Expenditure and GFCF - Gross Fixed Capital Formation

Source: Calculations based on RBI data.

The declining investment growth also manifests from the fact that in recent past the number of investment proposals through different routes has declined (Table 9). In terms of volume of proposed investment, we can see that there seems to be lesser interest among investors in recent years. The total number of investment proposals filed in 2011 stood at 3900, amounting to Rs. 15,39,728 crore. It declined to Rs. 3,11,031 crore in 2015 and Rs. 4,14,086 crore in 2016.

Table 9. Declining Investment Proposals

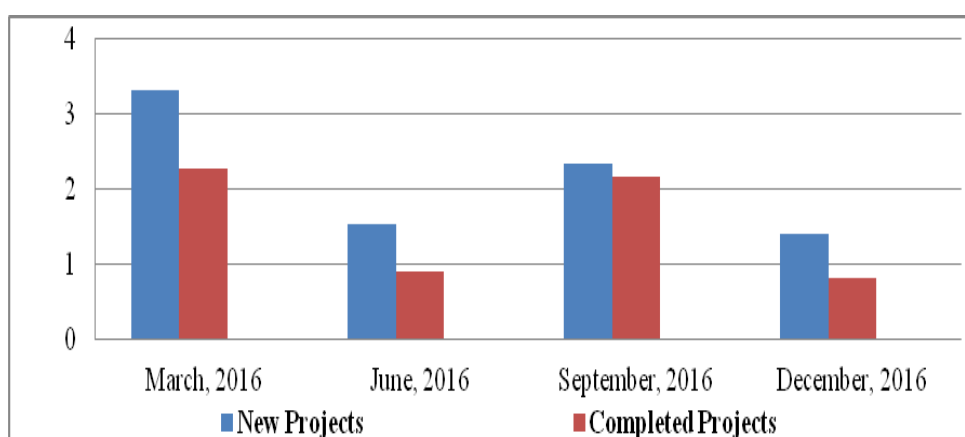
Year	Investment Proposals-Number			Proposed Investment (Rs. Crore)		
	IEMs	DILs	Total	IEMs	DILs	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2011	3868	32	3900	1537710	2018	1539728
2012	2826	2	2828	567830	38	567868
2013	2365	22	2387	529828	258	530086
2014	1801	42	1843	404339	688	405027
2015	1909	89	1998	307357	3674	311031
2016	2256	27	2283	410422	3664	414086

Note: IEM - Industrial Entrepreneur Memorandum & DIL - Direct Industrial Licence
Source: DIPP: SIA Statistics, 2017.

In view of the sluggish investment growth, which can be seen in the form of declining number of investment proposals and volume of the proposed investment, the Demonetisation exercise carried out towards end of the year 2016 is likely to have had adverse impact on the overall investment processes because of uncertainty,

which comes from deteriorating business expectation from the producers and lack of consumer's confidence. It can be further established from the declining volume of investment in the form of new projects (Figure 4). Also, the volume of completed projects has also declined in comparison to previous quarters.

Figure 4. Declining Volume of Projects (Rs. in Trillion)



Source: CMIE: CapeEX Database

The effect of demonetisation exercise becomes more critical when considering the fact that there has been deterioration in the overall assessment of the business situation, which suggests that there has been a decline in business sentiments during July-Sept Quarter (Q2) of the year 2017-18 over the previous quarter. The RBI's 79th Round of India's Industrial Outlook Survey conducted during July-September 2017 indicates that there has been a marginal improvement in the overall business sentiment for Quarter 3 of the financial year 2017-18. However, the actual assessment is worrisome (Table 10). The Business Expectation Index (BEI) is a composite index, constructed by taking into

account several parameters that constitute the "business sentiments". It seeks to assess the business situation of the companies in the manufacturing sector. The 79th round of the Industrial Outlook Survey is based on the responses received from 1141 companies. It can be seen that during Quarter 2, the overall business sentiment, assessed over previous quarter, is found to be weak. However, business expectation for Quarter 3, assessed in Quarter 2, is found to be encouraging, but does not rule out persistence of weak business sentiment among the producers. The survey is based on the responses of the manufacturers.

Table 10. Business Expectation Index (Net Responses in % Comparison over Previous Quarter)

Parameters	Assessment Period		Expectation Period	
	Q1:2017-18	Q2: 2017-18	Q2:2017-18	Q3:2017-18
Production	16.0	16.4	30.2	34.3
Order Books	13.7	12.1	28.0	29.9
Pending Orders	11.3	13.7	6.0	6.7
Capacity Utilisation	7.1	7.1	16.3	20.8
Exports	3.4	8.8	16.3	19.0
Imports	7.1	8.9	10.7	12.8
Employment	5.4	7.3	8.7	10.4
Financial Situation	19.1	15.8	27.9	28.7
Availability of Finance (from internal accruals)	14.1	13.7	20.4	20.2
Cost of Finance	-1.2	-0.5	-3.8	-2.2
Cost of Raw Material	-42.1	-41.8	-36.4	-31.9
Selling Price	5.0	-0.1	7.9	7.0
Profit Margin	-12.5	-14.0	0.3	1.8
Overall Business Situation	21.4	17.3	33.7	36.9
Salary	39.4	34.5	32.0	23.9
Business Expectation Index	105.4	103.6	113.3	115.0

Source: RBI: Industrial Outlook Survey, 79th Round. September 2017.

Very similar to the way in which the Demonetisation exercise seems to have impacted the investment process in the economy, it also appears to have had adversarial effect on consumers, and thereby the overall growth prospects. As discussed in the previous section, given that transactions in India are largely cash driven and a significant size of the economy falls under the informal sector that lives on cash, the Demonetisation exercise will not only result in lower consumption growth because of unavailability of cash, but also consumers in general are likely to spend less due to the uncertain economic scenario that has emanated from the Demonetisation exercise. This is evident from RBI's Consumers Confidence Surveys. The survey is nothing but an assessment of household's perception of

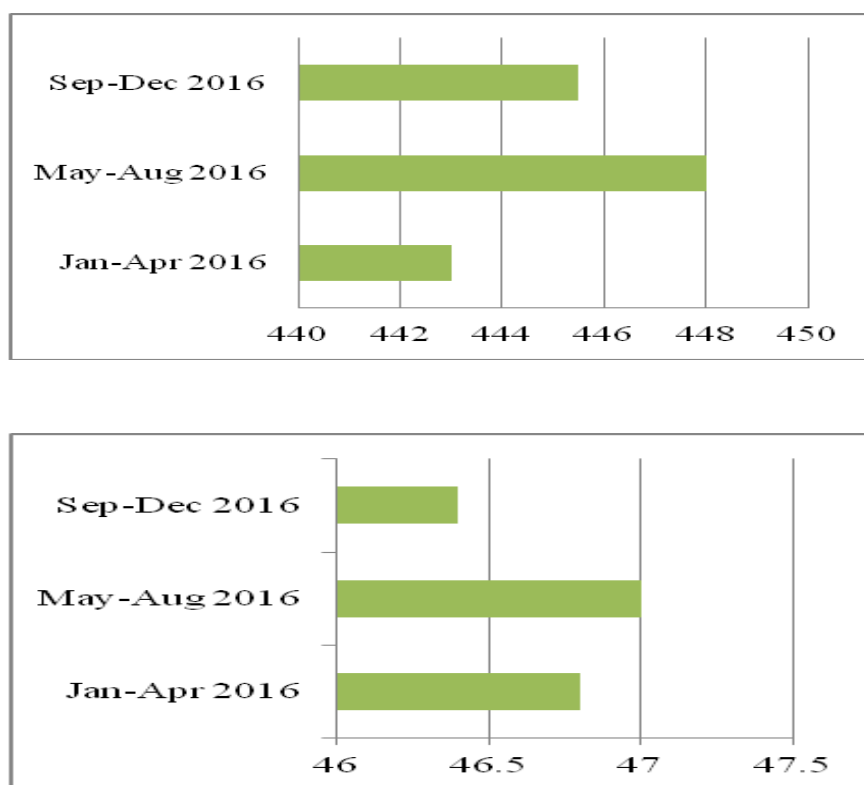
general economic conditions, employment scenario, and the price situation. It also surveys consumers' assessment of their own income and spending given the general economic conditions. The survey which is conducted in six metropolitan cities captures consumer's perception on current economic situation on above indicators in comparison to the previous year's economic position and also their future expectation (one year ahead). The latest survey states that the current situation index has declined from 95.5 in September 2017 to 91.1 in November 2017 (Table 11). Except spending, all other major components of the index suggest that there has been deterioration in the economic condition, income and spending, and employment situation.

Table 11. Consumer Confidence Index as per RBI's Consumer Confidence Survey December 2016

Main Variables	Current Perception Compared with 1 Year ago*		One year ahead Expectations Compared with Current Scenario**	
	September 2017	November 2017	September 2017	November 2017
(1)	(2)	(3)	(4)	(5)
Economic Condition	-6.2	-18.9	24.5	14.6
Income	-0.1	-3.6	36.1	33.0
Spending	81.5	84.2	83.8	84.6
Employment	-13.6	-19.2	23.8	17.8
Price Level	-84.1	-86.9	-74.5	-76.2
Consumer Confidence Index	95.5	91.1	118.8	114.7

Note: * households' perception of current economic situation in September 2017 and November 2017 *vis-à-vis* last year's (September 2016 and November 2016, respectively) perception of economic situation. **households' expectation of future economic situation (one year ahead) as surveyed in September 2017 and November 2017.

Source: RBI: Consumer Confidence Survey, November 2019.

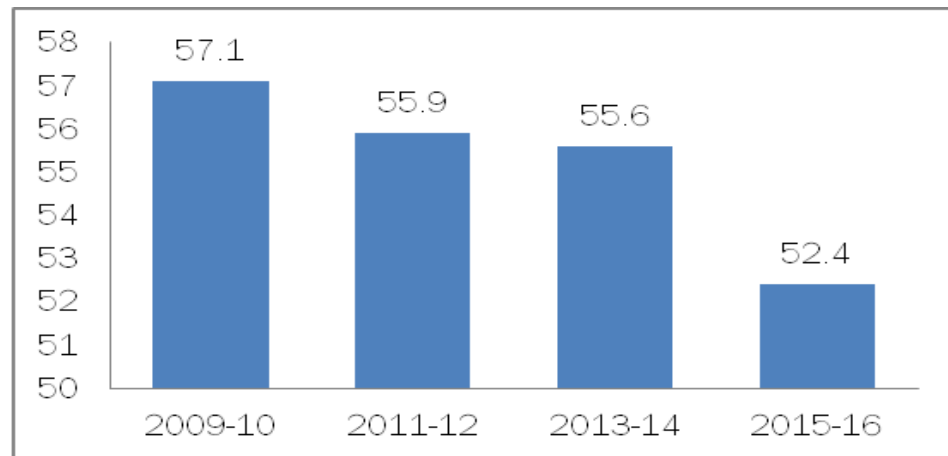
Figure 5. Labor Force and Labor participation Rate: 2016 (No. in Million and Rate in percent)

Source: Labor Bureau. Quarterly data for 2015-16, which could resolve the question about seasonality, are not available.

The sharp decline in Consumer Confidence Index, including employment scenario, is further established by the fact that both labour force and labour participation rate shrank during the demonetisation period (Figure 5). The labour force which stood at 448 million between May and August 2016, declined to 445.5 million between September and December 2016. Similarly, the labour participation rate too declined from 47 percent between May and August 2016 to 46.4 percent during September and December 2016.

The decline in labour force participation rate during the post demonetisation period is substantial in comparison to pre demonetisation period (Figure 6). The decline in labour force and labour participation rate while likely to dampen the overall demand of the economy due to declining purchasing power, will, on the other side, contribute adversely in terms of consumer sentiment. Therefore, it is likely to have an adverse impact on the expansion of output.

Figure 6. Labour Force Participation Rate (%): 2009-16



Source: International Labour Organisation (ILO) and Labour Bureau. Annual data were not available.

As discussed in the previous section, India's export performance has been impressive in terms of growth in the years prior to 2014-15 and 2015-16. However, the value of imports always outweighs the value of exports. This results in negative net export value. As shown in the table below, while the value of both exports and imports have increased over quarters, the gap between exports and imports has narrowed down

(Table 12). But still the value of net exports continues to be negative. Given the fact that there is not much demand in the global economy, and India as an economy has not been so successful in terms of the contribution of external sector to output growth, the Demonetisation exercise is likely to impact export activities, especially those of the informal sector.

Table 12. State of Net Export: Quarter Wise
(value in Rs. Billion, at market prices, Base year 2011-12, constant prices)

Year/Quarter	Export	Import	Net Export
(1)	(2)	(3)	(4)
2011-12Q1	5051.50	6412.14	-1360.64
2011-12Q2	5070.30	6406.26	-1335.96
2011-12Q3	5546.14	7155.98	-1609.84
2011-12Q4	5771.37	7181.16	-1409.79
2012-13Q1	5409.00	6888.21	-1479.21
2012-13Q2	6276.76	7098.53	-821.77
2012-13Q3	5367.22	7493.71	-2126.49
2012-13Q4	5832.83	7303.39	-1470.56
2013-14Q1	5561.95	6660.14	-1098.19
2013-14Q2	6192.43	6513.35	-320.92
2013-14Q3	6239.27	6456.34	-217.07
2013-14Q4	6672.67	6803.86	-131.19
2014-15Q1	6208.69	6617.00	-408.31
2014-15Q2	6258.75	6812.30	-553.55
2014-15Q3	6364.68	6822.81	-458.13
2014-15Q4	6251.91	6391.79	-139.88
2015-16Q1	5853.24	6455.77	-602.53
2015-16Q2	5992.64	6774.65	-782.01
2015-16Q3	5796.84	6387.60	-590.76
2015-16Q4	6134.71	6289.91	-155.2
2016-17Q1	6040.52	6079.53	-39.01
2016-17Q2	6011.93	6164.98	-153.05
2016-17Q3	6045.10	6273.27	-228.17
2016-17Q4	6782.56	6888.39	-105.82
2017-18Q1	6021.59	7038.27	-1016.68

Source: Calculations based on RBI data.

As regards the well-known criticism of "after that therefore because of that" logical fallacy, we are suggesting in this paper that demonetisation is very likely to have made the already existing macroeconomic challenges more difficult to address.

V (ii). Interest Rate Scenario: Distributional Aspects of Demonetisation

The changes in interest rate for both lending and deposit bear far reaching distributional consequences, along with implications for growth

discussed above. While lending rate is on decline and has further declined after Demonetisation exercise; the interest rate on deposits have also gone down substantially (Table 13). The policy repo rate, expected to influence the lending rate, if not the proxy for it, declined from 7.25 percent on July 17, 2015 to 6.25 percent on October 4, 2016, and continues to remain at 6.25 percent as of February 2017. The average term deposit rate (more than one year) declined from 8.25 percent on July 17, 2015 to 6.9 percent on November 18, 2016; 6.8 percent on November 25, 2016 and 6.75 percent on December 30, 2016.

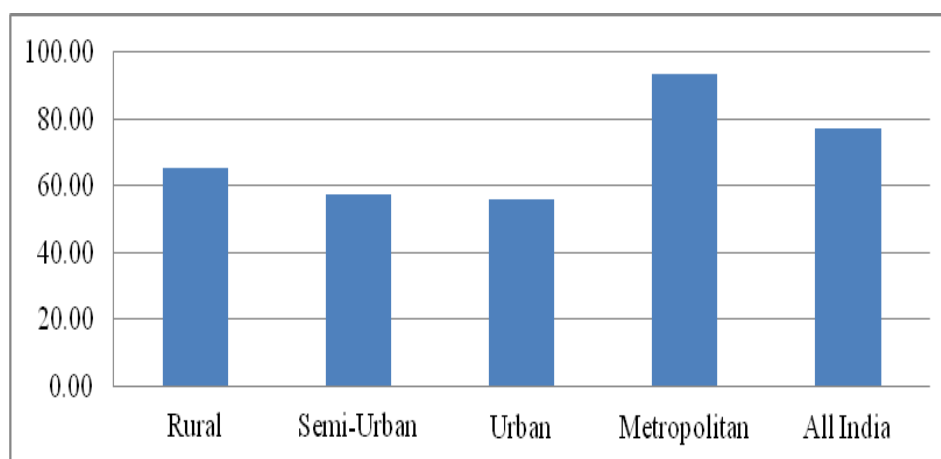
Table 13. Movement of Repo Rate, MCLR & Term Deposit Rate (in percent)

Weekend	Policy Repo Rate	Average Term Deposit Rate >1 Year	MCLR
(1)	(2)	(3)	(4)
Nov. 24, 2017	6.00	6.37	7.87
Aug. 4, 2017	6.00	6.50	7.92
May. 19, 2017	6.25	6.57	7.92
May. 12, 2017	6.25	6.62	7.92
Apr. 28, 2017	6.25	6.75	7.97
Feb. 17, 2017	6.25	6.75	7.75
Jan. 6, 2017	6.25	6.75	7.75
Dec. 30, 2016	6.25	6.75	8.65
Nov. 25, 2016	6.25	6.80	8.65
Nov. 18, 2016	6.25	6.90	8.65
Nov. 11, 2016	6.25	6.90	8.65
Oct. 28, 2016	6.25	6.90	8.80
Oct. 21, 2016	6.25	7.15	8.80
Oct. 7, 2016	6.25	7.15	8.80
Sep. 30, 2016	6.50	7.15	8.85
Aug. 5, 2016	6.50	7.25	8.85
Jul. 29, 2016	6.50	7.25	8.90
May. 6, 2016	6.50	7.25	8.90
Apr. 8, 2016	6.50	7.25	8.95
Apr. 1, 2016	6.75	7.25	8.95
Mar. 25, 2016	6.75	7.45	-
Oct. 9, 2015	6.75	7.45	-
Oct. 2, 2015	6.75	7.62	-
Aug. 28, 2015	7.25	7.62	-
Aug. 21, 2015	7.25	7.75	-
Aug. 14, 2015	7.25	7.90	-
Aug. 7, 2015	7.25	8.00	-
Jul. 17, 2015	7.25	8.25	-

Source: Calculations based on RBI data.

The declining interest rate is likely to impact different sets of people differently. As we know that there is no one-to-one correspondence between the borrowers and depositors, borrowers may turn to be the greatest beneficiary of this move. As bank credit tends to concentrate in the metropolitan areas, people who live in rural, semi-urban and urban areas save relatively more (borrow less) and are the net losers as their deposits now earn lesser interest and it is less

likely that they would borrow from banks (Figure 7). It is true that MCLR, which governs the lending rates, has also declined along with the deposit rate. However, a person who saves does not necessarily borrow. During the whole Demonetisation exercise, while saving was made compulsory (indirectly) as old currency was required to be deposited in bank accounts, borrowing was not mandatory.

Figure 7. Credit-Deposit Ratio: March 2015 (in percent)

Source: Calculations based on RBI data.

V (iii) Implication for Banking Sector

Cash Shortage and Remonetisation

The immediate outcome of the Demonetisation of the Rs. 500 and Rs. 1000 denomination notes is cash shortage in the economy as it takes away more than 86 percent of the total currency in circulation. As more than half of the households in India do not have a bank account and more than 60 percent of the economy is informal in nature, the importance of cash cannot be so easily dismissed as the informal economy largely runs on it [Ghandy, 2016]. This is evident from the fact that the cash to GDP ratio in India is 12 percent against the world average of 4 percent and about 78 percent of transactions in India are in cash as against an average of 20-15 percent in advanced industrialised economies [Ghandy, 2016]. Therefore, given the importance of cash in the everyday transactions, its shortage is likely to have implications for demand and growth. Though there are various talks on and references

to a paperless economy, the conversion of cash-based transactions into electronic modes of payment such as debit/credit cards, mobile wallets, and internet banking will require "some" reasonable time not only for initiating and stabilising the system, but also to build not only the necessary physical infrastructure for it but, even more importantly, the trust amongst the users of the electronic modes of payment. As such, in an interwoven economy, an adverse impact of demonetisation on the organised sector also cannot be ruled out completely.

The importance of cash is also evident from the indent of currency for the year 2016-17. The RBI places indent for bank notes with printing presses on the basis of an economic model factoring in, inter alia, real GDP growth prospects, rate of inflation and demonetisation-wise disposal rate of soiled notes. For the financial year 2016-17, the indent for total volume of bank notes was 24550 million pieces, of which 2200 and 5725 million pieces of bank notes in denominations of Rs. 1000 and Rs. 500 respectively (Table 14).

Table 14. Indent and Supply of Currency Notes: 2013-17 (Million Pieces)

Denomination	2013-14		2014-15		2015-16		2016-17 Indent
	Indent	Supply	Indent	Supply	Indent	Supply	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
5	0	0	0	0	0	0	0
10	12164	9467	6000	9417	4000	5857	3000
20	1203	935	4000	1086	5000	3252	6000
50	994	1174	2100	1615	2050	1908	2125
100	5187	5131	5200	5464	5350	4910	5500
500	4839	3393	5400	5018	5600	4291	5725
1000	975	818	1500	1052	1900	977	2200
Total	25362	20918	24200	23652	23900	21195	24550

Source: Calculations based on data from Annual Report 2016 of the RBI.

As per the RBI, post Demonetisation, Rs. 9.2 trillion new notes have been injected into the economy in form of Rs. 500 and Rs. 2000 currency notes. The fact remains that unless there is alternative arrangement for bridging the gap of money transactions, it will be difficult to avoid further contraction in economic growth. Large variation in supply of Reserve Money in the form of currency in circulation has adversely affected

the supply of M3, i.e., broad money in the market. Whereas deposits with the banks increased significantly both in the form of demand and time deposits, by 26.4 and 13.2 per cent year-on-year (in December 2016 over December, 2015), respectively, the percentage of currency with public went down by 47.6 per cent during the same time period (Table 15).

Table 15. Composition of Money Supply (Rs. in Billion)

Item	Amount in Rs. Billion						Change Over Stipulated Periods (%)		
	December 25, 2015	March 31, 2016	October 28, 2016	December 23, 2016	March 31, 2017	October 27, 2017	March 31, 2017/ March 31, 2016	October 28, 2017/ October 27, 2016	Dec 23, 2016/ Dec 25, 2015
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
M3	113044.90	116176.2	123649.1	120057.8	127919.4	131113.1	10.1	6.04	6.20
Currency with Public	14997.48	15972.5	17022.1	7858.6	12641.2	15487.5	-20.9	-9.02	-47.60
Demand Deposit with Banks	9440.618	9898.3	10405.4	11934.5	13967.4	12583.3	41.1	20.93	26.42
Time Deposits with Banks	88463.32	90150.8	96062.0	100112.1	101099.8	102817.5	12.1	7.03	13.17
Other Deposits with RBI	143.4393	154.5	159.6	152.6	210.9	224.8	36.5	40.85	6.39

Source: Calculations based on RBI data.

The shortage of currency has impacted money supply in the economy which, in turn, has resulted in a contraction in economic transactions of the country. The contraction in transactions will result in contraction in lending which, in turn, will impact production and income generation adversely [Kumar, 2017]. Though a large amount of demonetised currency has been deposited with banks, to propel economic growth money needs to keep circulating at a certain pace. In the unorganised sector (particularly in MSME and Agriculture sectors that continue to be largely unorganised), a large percentage of transactions is primarily done in cash.

State of Credit Delivery

Due to demonetisation, banks were primarily engaged in receiving demonetised bank notes from public and returning them to the RBI. Furthermore, banks were not able to lend money to the market for various reasons including the voluminous job of demonetisation. Just as many businesses in the unorganised sectors suffered from cash shortage immediately after Demonetisation, many businesses, in different sectors, must have suffered from shortage of bank credit as well during the period following Demonetisation. This, in turn, would affect their growth rates as well. The businesses of the banks are mainly revolving around deposit growth and investment (Table 15 & 19).

Table 16. Credit Growth of Scheduled Commercial Banks (Rs. in Billion)

Period	Food Credit	Non Food Credit	Bank Credit
(1)	(2)	(3)	(4)
Outstanding as on (Rs. Billion)			
Sep-17	463.68	79370.70	79834.38
Mar-17	539.27	77875.39	78414.66
Dec-16	1050.64	72123.27	73173.91
Sep-16	854.62	74094.06	74948.68
Mar-16	1052.53	71443.62	72496.15
Dec-15	1110.05	68772.44	69882.49
Sep-15	1027.39	65831.53	66858.92
Mar-15	944.18	64420.02	65364.20
Dec-14	1083.22	62102.02	63185.24
Variation over Stipulated Time Period (%)			
Sep 2017/Sep 2016	-45.74	7.12	6.52
Mar 2017/Mar 2016	-48.76	9.00	8.16
Dec 2016/Dec 2015	-5.35	4.87	4.71
Sep 2016/Sep 2015	-16.82	12.55	12.10
Mar 2016/Mar 2015	11.48	10.90	10.91
Dec 2015/Dec 2014	2.48	10.74	10.60

Source: Calculations based on RBI data.

The growth of bank credit declined from 3.37 percent during September - December Quarter of 2015-16 to 0.93 percent during the same quarter for the financial year 2016-17. The decline in growth of bank credit is also evident from the year-on-year growth figures (Table 16). The year-on-year non-food credit growth in December 2016 (on December 2015) declined to 4.87 percent from 10.74 percent in December 2015, clearly showing the role of demonetisation exercise in contraction of credit growth. Subse-

quently there was some improvement in credit growth in March 2017 (9 percent). And it declined to 7.12 percent in September, 2017. Demonetisation may not be the only reason for the comparatively low credit growth, as the credit off-take during the current year has otherwise been slow except for growth under certain sub-segments of Retail lending, yet the low credit growth in segments other than Retail may be adversely affecting the growth momentum of the country.

Table 17. Deployment of Gross Bank Credit by Major Sectors

Sector	Outstanding as on (Amount in Rs. Billion)						Variations over Stipulated Periods (%)			
	Sept 29,17	Dec 23,16	Sep 30,16	Dec 25,15	Sep 29,15	Dec 26,14	Sep 29, 2017/ Sep 30, 2016	Sep 30, 2016/ Sep 29, 2015	Dec 23, 2016/ Dec 25, 2015	Dec 25, 2015/ Dec 26, 2014
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Non-food Credit	71670.57	65789.74	67555.65	63251.09	60986.57	57869.55	6.09	10.77	4.01	9.30
Agriculture & Allied Activities	9970.97	9112.70	9427.48	8423.89	8133.11	7473.17	5.76	15.91	8.18	12.72
Industry (Micro & Small, Medium and Large)	26404.11	25791.24	26521.53	26951.82	26293.03	25686.63	-0.4	40.87	-4.3	14.93
Micro & Small	3690.00	3435.57	3630.06	3740.84	3674.53	3649.68	1.65	-1.21	-8.16	2.50
Medium	1018.61	1060.45	1107.35	1150.83	1136.47	1245.53	-8.01	-2.56	-7.85	-7.60
Large	21695.50	21295.22	21784.12	22060.15	21482.03	20791.42	-0.41	1.41	-3.47	6.10
Services	17748.66	15793.89	16590.06	14582.36	14013.72	13489.08	6.98	18.38	8.31	8.10
Personal Loans	17546.82	15091.92	15016.58	13293.02	12546.71	11220.67	16.85	19.69	13.53	18.47
Priority Sector	24265.71	22442.96	23388.99	21563.75	20991.87	19433.63	3.75	11.42	4.08	10.96

Source: Calculations based on RBI data.

Post demonetisation, there was a decline in the growth of bank credit in all sectors and sub-sectors compared to the pre-demonetisation period (Table 17 & 18). All major sectors of the economy are exhibiting a downward trend in credit growth in the post-demonetisation period. From the year-on-year analysis of growth of credit, it can be seen that in December 2016 credit growth in all sectors except for services declined in comparison to the previous year's credit growth (Table 17). There has been substantial decline of credit growth in the priority sector and industrial sector. Bank credit growth in the priority sector declined from 10.96 percent in December 2015 (over December 2014) to 4.08 percent in December 2016. Similarly, there was a decline in the growth of credit in the industrial sector, from 4.93 percent in December 2015 to -4.31 percent in December 2016. The recent figures show that there has been an improvement in the credit growth; however, it is yet to recover to the pre-demonetisation period.

The quarterly credit growth figures also suggest a similar pattern (Table 18). All sectors and sub-sectors witnessed a decline in credit growth during Oct-Dec quarter of the financial year 2016-17 in comparison to previous year's the quarterly growth figures (Oct-Dec, 2015-16). The growth of non-food credit went down from 3.14 percent during Oct-Dec quarter of 2016-17 to -0.61 for the same quarter of 2015-16. While the credit growth in the agriculture and allied sector declined from 2.73 percent to -0.72 percent, the industrial sector also witnessed a dip in credit growth from 1.77 percent to -1.82 percent. There was also substantial decline in the growth of priority sector credit.

Table 18. Credit Growth of Different Sectors and Sub-Sectors (in percent)

Sectors	Oct-Dec, 2015-16	Oct-Dec, 2016-17
(1)	(2)	(3)
Non-food Credit	3.14	-0.61
Agriculture & Allied Activities	2.73	-0.72
Industry (Micro & Small, Medium and Large)	1.77	-1.82
Micro & Small	0.83	-3.32
Medium	-1.29	-2.90
Large	2.10	-1.51
Services	3.64	-1.41
Personal Loans	5.76	2.51
Priority Sector	2.43	-1.44

Source: Calculations based on RBI data.

Given that the various segments, viz., Agriculture & Allied Activities, Industry, Personal Loan and Priority Sector (where the percentage of unorganised enterprises/entities is comparatively more) were already struggling due to the steady decline in credit flows, Demonetisation would have all the more cascading effect on the creation of new avenues in the coming quarters (Tables 17 and 18).

Managing Liability

The decline in credit growth and the spur in deposit growth will put banks under tremendous pressure with respect to how to manage the accumulated liquidity which is nothing but a liability of the banking system. It is evident from the fact that post Demonetisation, the Credit-Deposit ratio of the SCBs has declined from 74.24 percent as on October 28, 2016 to 69.87 percent on December 23, 2016 (Table 19). On the other side, the pressure to manage the accumulated liability in the form of deposits has resulted in a higher Investment-Deposit ratio. The Investment-Deposit ratio has increased from 29 percent as on October 28, 2016 to 34.32 percent on December 23, 2016.

Table 19. Credit-Deposit and Investment Deposit Ratio: Scheduled Commercial Bank (in percent)

Week Ended	Credit-Deposit Ratio	Investment-Deposit Ratio
(1)	(2)	(3)
Feb. 3, 2017	70.81	32.90
Jan. 20, 2017	70.68	34.14
Jan. 6, 2017	70.04	34.35
Dec. 23, 2016	69.87	34.32
Dec. 9, 2016	69.29	30.97
Nov. 25, 2016	69.33	30.84
Nov. 11, 2016	72.70	28.65
Oct. 28, 2016	74.24	29.00
Oct. 14, 2016	73.89	28.98
Sep. 30, 2016	74.19	28.25
Sep. 16, 2016	74.66	29.00
Sep. 2, 2016	74.31	29.21
Aug. 19, 2016	74.80	29.03
Aug. 5, 2016	74.76	29.32
Jul. 22, 2016	75.13	29.02
Jul. 8, 2016	75.40	28.91
Jun. 24, 2016	75.62	28.76
Jun. 10, 2016	75.77	28.81
May 27, 2016	75.83	28.69
May 13, 2016	76.01	28.43
Apr. 29, 2016	75.81	28.25
Apr. 15, 2016	76.05	28.71
Apr. 1, 2016	77.46	26.70

Source: Reserve Bank of India

CONCLUSION

The paper has attempted to explore three broad objectives concerning the "Demonetisation" exercise announced on November 8, 2016: to what extent the exercise is justified in terms of its stated objectives, and its macroeconomic implications for the Indian economy in terms of growth, distributional consequences and challenges for the banking system. We find that the stated objective behind the Demonetisation exercise is not so convincing, as it will have a limited impact on black money, and the volume of detected counterfeit notes is too small to be an objective behind such a painstaking and cost intensive exercise. Black economy or money had thrived in India despite Demonetisation exercise

of 1978. Now while most deposits which have made into the banks carry the addresses of the holder and can be tracked for the owners of unaccounted incomes, and while the process has already started, the human resources of the Income Tax Department are perhaps too limited for the task ahead. From the growth perspective we find that the growth outlook does not seem to be in consonance with the stated objective. The slowdown as indicated in various segments of the economy for the current and coming financial year is definitely worrisome. As the world economy is going through a difficult time, the slowdown of Indian economy in terms of economic growth raises serious questions on the whole exercise of Demonetisation of November

2016. Declining investment growth, dampened business sentiments, lesser volume of new investments in the form of new projects and reduced consumer confidence in the economy are all likely to impact economic growth adversely. However, it is too early to conclude that contraction in GDP in the subsequent time period as projected is due to Demonetisation alone. It may eventually become one of the contributing factors for the slowing down of the economy in the short and medium terms. However, it bears greater implication from the point of distribution. It tends to create a new interest rate regime that eventually benefits few by making a sizable population worse off. Unfortunately, we do not have sufficient data to prove this point convincingly. There has been a decline in both the lending and the deposit rates. With declining deposits rates, savers are the ultimate losers as there is no one-to-one correspondence between borrowers and savers. As credit tends to concentrate in the metropolitan areas, savers located in rural areas and small towns are likely to lose as they borrow less. Finally, the Demonetisation exercise brings huge challenges for banks as their liability goes up due to the large surge in the volume of deposits. This surge may be temporary, but it can have a lasting impact on the economy. The economy is already in a slowing down mode, with limited credit take-off and declining investment rate. The disruption caused by demonetisation is very likely to further add to that problem because the banks may not be able to lend due to the more immediate priority of accepting and managing the larger volume of deposits, and quite possibly, also due to the further weakened demand for credit owing to the uncertainty caused by this disruption. Maintaining the volume as well as the quality of lending will be challenging tasks for the banks as they would rush to meet their lending targets. In view of reduced credit demand in the post Demonetisation period, banks will find it difficult

to manage the accumulated deposits which is a liability for them as interest is to be paid on the deposits.

NOTES

1. See Gazette Notification No. 2652 dated November 08, 2016 issued by Government of India. The Gazette notification inter-alia states: (1) "It has been found that fake currency notes of the specific bank notes have been largely in circulation and it has been found to be difficult to easily identify genuine bank notes from the fake ones and that the use of fake currency is causing adverse effect to economy of the country; (2) It has been found that high denomination bank notes are used for storage of unaccounted wealth, as has been evident from the large cash recoveries made by law enforcement agencies; (3) It has been found that fake currency is being used for financing subversive activities such as drug trafficking and terrorism, causing damage to the economy and security of the country".

2. Assuming 1US\$ is equivalent to Rs. 68.

3. This is over and above the large unfavourable distributional impact, at least during the immediate months after demonetisation, on the cash-intensive and most likely employment oriented unorganised sector, widely reported in media and scholarly articles? Also if, in the medium to longer run, monetisation is expected to reduce the stock if not the growth of black incomes and wealth, that opens up another channel improving income and consumption distribution. We have not examined both these aspects.

REFERENCES

- CMIE, 2017; 'Quarterly CapeEx Aggregates', Centre for Monitoring Indian Economy. Available at: <https://www.cmie.com>; accessed on March 7.
- Dasgupta, Dipankar, 2016; 'Theoretical Analysis of 'Demonetization'', *Economic and Political Weekly*, Vol. 51, No. 51.
- Ghandy, K., 2016; 'Demonetisation: One Step Forward, Two Steps Back', *Economic and Political Weekly*, Vol. 51, No. 50.
- GOI, 2012; 'White Paper on Black Money', Ministry of Finance, Government of India, Available at: www.finmin.nic.in/reports/WhitePaper_BackMoney2012.pdf
- GOI, 2016; 'The Gazette of India published as "Extraordinary" in PARTII-Section 3-Sub-section (ii) under reference NO. 2652', dated November 8.
- GOI, 2017; *Economic Survey 2016-17*, Ministry of Finance, Government of India.

- ILO, 2016; India Labour Market Update, July, (http://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/---sronew_delhi/documents/publication/wcms_496510.pdf) access on November 30, 2017.
- IMF, 2017; *World Economic Outlook*, International Monetary Fund.
- Kumar, 2016; 'Estimation of the Size of the Black Economy in India, 1996-2012', *Economic and Political Weekly*, Vol. 51, No. 48.
- Kumar, A., 2017; 'Economic Consequences of Demonetisation: Money Supply and Economic Structure', *Economic and Political Weekly*, Vol. 52, No. 1.
- Labour Bureau, Employment - Unemployment Survey, 2015-16.
- Lahiri, A.K., 2016; 'Demonetisation, the Cash Shortage and the Black Economy', NIPFP Working Paper No. 184, National Institute of Public Finance and Policy, December.
- NIPFP, 2016; 'Demonetisation: Impact on the Economy', RNIPFP Working Paper No. 182, National Institute of Public Finance and Policy, November.
- Rajkumar, J.D. and S.L. Shetty, 2016; 'Demonetisation: 1978, the Present and the Aftermath', *Economic and Political Weekly*, Vol. 51, No. 48.
- RBI, (undated), *Annual Report*, various years.
- RBI, 2016; 'Withdrawal of Legal Tender Character of Existing Rs. 500/- and Rs. 1,000/- Bank Notes', RBI Notification No. RBI:2016-17/112 (DCM(Plg) No.1226/10.27.00 /2016-17) dated November 08.
- RBI, 2016; *Consumer Confidence Survey*, December.
- RBI, 2016; Fifth Bi-Monthly Monetary Policy Statement, 2016-17. (December 07, 2016)
- RBI, 2016; Press release on 'Reserve Money for the Week Ended December 30, and Money Supply for the Fortnight Ended December 23', Reserve Bank of India.
- RBI, 2017; *Industrial Outlook Survey*, 76th Round, January.
- RBI, *Handbook of Statistics on Indian Economy*.
- Sundaram, K and V. Pandit, 1976; 'On Black Money', *Indian Economic Review*, Vol. 11, No. 2.
- World Bank, 2016; *Global Economic Prospects: Divergences and Risks*, June.

PATTERN OF URBANISATION IN BIHAR: (1961-2011)

Barna Ganguli Rahbar Ali Bakshi and Amit Kumar Sinha

Bihar is one of the least urbanised states of India. Although, the state is performing better in development indicators including growth rate, in urban development graph, when compared with other states, it is trailing behind. The paper endeavours to understand the process of urbanisation in Bihar based on two criteria of development, i.e., modern facilities and human development. Urbanisation in the state has been found more in southern region. Practically, Patna is the only urban district of the state. Thus, Bihar needs progressive urban development policy to promote urbanisation in other districts. This can be achieved through monitoring and improvement of basic human development indicators and modern urban facilities.

Introduction

Nowadays, urbanisation is a global issue and also a concern for scientists and researchers. World over, the phenomenon of urbanisation has occurred after the industrial revolution which started in the year 1760 in England and lasted till 1830. Later it spread to Belgium and France. And once Germany, United States of America and Japan achieved the industrial power, which process started in mid 19th century, it outstripped Britain's initial success. The East European countries lagged behind till the beginning of the 20th century. India and China joined the race in the mid 20th century. Urbanisation is a process of conversion from rural economy to modern advanced economy. Urbanisation and growth are intertwined. No country has ever achieved economic growth without urbanisation. Globally, more people live in urban areas than in rural areas, with 54 per cent of the world's population residing in urban areas in 2014.¹ In 1950, 30 per cent of the world's population was urban, and by 2050, 66 per cent of the world's population is projected to be urban [United Nations, 2014]. The process of urbanisation in developing countries has been characterised by an interesting phenomenon. During the three time periods of 1970-75, 1975-80 and 1980-85, the rate of growth of urbanisation in developing countries stood at 1.4, 1.6 and 1.6 per cent per annum respectively

[United Nations, 1983]. Continuing population growth and urbanisation are projected to add 2.5 billion people to the world's urban population by 2050, with nearly 90 per cent of the increase concentrated in Asia and Africa. Just three countries-India, China and Nigeria- together are expected to account for 37 per cent of the projected growth of the world's urban population between 2014 and 2050. India is projected to add 404 million urban dwellers, China 292 million and Nigeria 212 million.²

The process of urbanisation historically has been associated with other vital economic and social transformations, which have brought greater geographic mobility, lower fertility, longer life expectancy and ageing population. Cities are potentially important drivers of development and poverty reduction in both urban and rural areas, as they concentrate much of the national economic activity, government, commerce and transportation, and provide important links with rural areas, between cities, and across international borders. Urban living is often associated with higher levels of literacy and education, better health, greater access to social services, and enhanced opportunities for cultural and political participation.

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However, rapid and unplanned urban growth threatens sustainable development when the necessary infrastructure is not developed or when policies are not implemented to ensure that the benefits of city life are equitably shared. Globally, despite the comparative advantage of cities, urban areas are more unequal than rural areas and hundreds of millions of the world's urban poor live in sub-standard conditions. In some cities, unplanned or inadequately managed urban expansion leads to rapid sprawl, pollution, and environmental degradation, together with unsustainable production and consumption patterns. Urbanisation needs to be connected to the three pillars of sustainable development: economic development, social development and environmental protection. The outcome of the Rio+20 United Nations Conference on Sustainable Development, "The future we want", recognised both the plight of the urban poor and the need for sustainable cities as matters of great urgency for the development agenda.

In demographic parameters, the level of urbanisation is measured by the percentage of population living in urban areas. In order to have a proper understanding of the urbanisation process, it would be appropriate to examine which settlements are treated as urban by the Census of India. There is no standard definition of urban; it varies from country to country [United Nations, 2009]. India's urban areas are defined on the basis of two criteria. First, the state government grants municipal status - corporation, municipal council, notified town area committee or nagar panchayat, etc. - to a settlement. Such settlements are known as statutory or municipal towns in the census definition of urban areas. Second, if a settlement does not have an urban civic status, but simultaneously satisfies demographic and economic criteria, like a population of more than 5,000, a density of 400 persons per square kilometre and 75% male workforce in the non-agricultural sector, it can be declared urban. Such urban areas are termed census towns [Bhagat, 2011, Pp.

10-12]. It is important to note that India's definition of urban areas is very broad-based and closely reflects levels of development unlike several other developing countries. For example, in South Asia, Nepal defines urban areas on the basis of population size only: a settlement with a population of more than 9,000 is declared urban. On the other hand, countries such as Bangladesh, Sri Lanka and Pakistan apply only the civic status criterion to declare a settlement urban [United Nations, 2009]. In each census, the rural-urban framework is prepared, based on the above definition of urban areas. Many new towns are added and some existing towns revert to rural status if they do not satisfy the criteria.

The present paper endeavours to understand the process of urbanisation in Bihar. Bihar is one of the least urbanised states of India. Although, the state is performing better in development indicators including growth rate, in urban development graph, when compared with other states it is trailing behind. The analysis of the process of urbanisation in Bihar is based on two criteria of development, i.e., modern facilities and human development. The precise objectives and the methodology used are explained in detail in a separate section below.

Literature Review:

The literature on urbanisation as a process and its spatial manifestation in terms of levels of urbanisation has been extremely varied and intensive. Studies on the emerging trends of urbanisation are sectoral and widely distributed, i.e., drawing the attention of scholars of numerous academic disciplines such as Sociology, Statistics, Geography, Economics, Political Science, which results in vast literature on this subject relating to different countries, states and cities of the world. In India, though urbanisation is a recent phenomenon, it is posing various problems as it is primarily arising out of tertiary or services sector rather than the secondary sector itself. The

process of urbanisation in India was labeled as 'pseudo' as it was different from the urbanisation occurring sequentially and gradually. According to Breese [1969], urbanisation in India is a pseudo-urbanisation wherein people arrive in cities not due to urban pull but due to rural push factors. In India, the process of population concentration in cities was not backed by corresponding economic progress. Bert F. Hoselitz [1962] summarises significant differences between European urbanisation and Indian urbanisation. According to him, less developed urban industry, large number of cottage and small scale industry, unskilled labour and other related features make economic development more difficult in India today than was the case in Europe in the 19th century. Louis Wirth [1938, Pp. 1-24] characterises urbanism³ as a way of life of the people who live in urban areas, tend to be highly mobile, have weak bonds among themselves and a faster pace of life; larger number of people live in close proximity to one another without knowing each other personally.

At the national level, urbanisation pattern along with its specific features has been studied over the years. Ramachandran [1992] deals with exposition and evaluation on the general study of urbanisation. Pranati Datta [2006] analyses urbanisation as an index of transformation from traditional rural economies to modern industrial one. Thus, one can conclude that in Indian perspective, urbanisation is still a very new process. Specifically, for Bihar, it is in nascent stage and if not supported by proper infrastructural and human development facilities, the process will lag further behind.

Similarly, the state level in-depth study seems to have become necessary especially to undertake implementation of local and state level, action-oriented civic and administrative policies. Such study may lead to the following queries:

(a) How does the pattern of progress of urbanisation depicted at the national level confirm the incidence of urbanisation in other states of the country? (b) What are the specific features of urban spread and growth? And (c) Do the imbalances in pattern of urbanisation manifest across different states/sub-state levels [Tilak, 2013, Pp. 41-66]?

Objective and Methodology:

An attempt has been made in the present study to analyse the process of urbanisation in the state of Bihar since 1961. The published data of Census of India for urbanisation and other variables have been used for the census years 1961, 1971, 1981, 1991, 2001 and 2011. This exercise is purely exploratory and has limited objective of understanding the broad patterns and trends of urban mosaic of the state. The study has tried to identify the basic reasons behind urbanisation pull. The variables have been divided on the basis of two development indicators- human development and modernisation. Human development indicator consists of education in which one-third weight is given to urban literacy and a high weight of two-third is given to urban female literacy), income (per capita income) and health (tap water and latrine facility). Indicators for Modernisation are households having access to electricity and banking facility and possessing TV, Computer /Laptop, Telephone/mobile phone Scooter/ Car. The index has been calculated as per the standard formula of Human Development Index of the UNDP.

The indices of urban development and modernisation are calculated using the following formula:

$$IoV = (V - V_{min}) / (V_{max} - V_{min})$$

where, IoV = Index of Variable, V = Variable, (i.e., urbanisation, Households with electrified

premises, etc.), Vmin = Minimum value of variable in that array, Vmax = Maximum value of variable in that array.

While, the Index of Human Development had been calculated as a simple arithmetic average of all three indices in the dimensions of health, education and income (equation (2), (3) and (4)):

$$\text{HDI} = (1/3) * (\text{IoH} + \text{IoE} + \text{IoLS}) \quad \dots(1)$$

where, IoH, IoE and IoLS denote the sub-indices for dimensions $i = \{h, e, ls\}$, respectively, denoting the health, education and living standards dimensions.

$$\text{IoH} = (((\text{lf} - \text{lfmin}) / (\text{lfmax} - \text{lfmin})) + ((\text{dw} - \text{dwmin}) / (\text{dwmax} - \text{dwmin}))) / 2, \quad \dots(2)$$

$$\text{IoE} = ((1/3) * ((\text{ul} - \text{ulmin}) / (\text{ulmax} - \text{ulmin}))) + ((2/3) * ((\text{ful} - \text{fulmin}) / (\text{fulmax} - \text{fulmin}))), \quad \dots(3)$$

$$\text{IoLS} = (\text{pci} - \text{pcimin}) / ((\text{pcimax}) - (\text{pcimin})) \quad \dots(4)$$

where, IoH = health index, IoE = education index, IoLS = index of living standard, lf = latrine facility, dw = drinking water (tap), ul = urban literacy, ful = female urban literacy, pci = per capita income, max = maximum and min = minimum;

The study has tried to club the districts according to the level of urbanisation. Based on certain indicators like Per Capita Income (2011-12), Urban Literacy, Urban Female Literacy, Households having Drinking Water Facility (Tap), Households having latrine facility within the premises, Households with electrified premises, with TV, Computer/Laptop, Telephone/mobile phone and Scooter/ Car, and Households availing banking services, we have tried to prove that it is the pull effect of modern facilities and human development element that leads to urbanisation. We mean to say that it is the facilities and development which attracts people towards developed city.

"Rural push" implies that rural workers are pushed to the cities by changes in rural economic conditions. Kundu [1983] also gave a supporting argument for the claim that urbanisation is occurring not due to urban pull but due to rural push. Thus, the Class I cities of Bihar, mainly Patna (16.8 lakh population), followed by Gaya (4.63 lakh population), Bhagalpur (3.98 lakh population) and Muzaffarpur (3.52 lakh population), etc., are having higher concentration of people compared to other cities falling between category II to VI. Thus, higher wage cities with better human development facilities and modern amenities like TV, laptop, electricity, etc., attract people from rural areas. Most of educational and health institutions are in the capital of state and district headquarters and also banking facilities for the institutional financial access which attracts the people to move to urban area from the rural area. The growth of human development facilities and modern amenities lead to population growth in urban areas. Such facilities are lacking in rural areas. Thus the people of rural area have no other option around except moving towards urban areas.

To know the impact of human development (Income, Education and Health) and modern services (Households with electrified premises, with TV, Computer/Laptop, Telephone/mobile phone and Scooter/ Car, and Households availing banking services) on urbanisation, a Correlation matrix has been constructed to assess the extent to which the urbanisation indicators effect or get impacted by human development and modernisation factors.

The data for per capita income has been collected from Department of Statistics and Evaluation, Government of Bihar, whereas, for other indicators including urban population, 2011 census has been used. A correlation matrix has been constructed to assess the extent to which the urbanisation indicators effect or get impacted by social development indicators.

Table 1. Matrix of Correlation among selected indicators and Urbanisation

Indicators	Urbanisation	Per Capita Income (2011-12)	Urban Literacy	Urban Female Literacy	Households having Drinking Water Facility (Tap)	Households having latrine facility within the premises	Human Development	Electrified Households	Households availing banking services	Households with TV, Computer / Laptop, Telephone/mobile phone / Scooter/ Car
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Urbanisation	1.00	0.86	0.31	0.34	0.72	0.51	0.58	0.51	0.37	0.58
Per Capita Income (2011-12)	0.86	1.00	0.37	0.40	0.82	0.49	0.65	0.48	0.43	0.80
Urban Literacy	0.31	0.37	1.00	0.97	0.45	0.76	0.90	0.64	0.56	0.52
Urban Female Literacy	0.34	0.40	0.97	1.00	0.49	0.83	0.94	0.71	0.49	0.58
Households having Drinking Water Facility (Tap)	0.72	0.82	0.45	0.49	1.00	0.64	0.74	0.63	0.49	0.81
Households having latrine facility within the premises	0.51	0.49	0.76	0.83	0.64	1.00	0.91	0.86	0.51	0.65
Human Development	0.58	0.65	0.90	0.94	0.74	0.91	1.00	0.80	0.58	0.76
Electrified Household Premises	0.51	0.48	0.64	0.71	0.63	0.86	0.80	1.00	0.40	0.64
Households availing banking services	0.37	0.43	0.56	0.49	0.49	0.51	0.58	0.40	1.00	0.50
Households with TV, Computer/ Laptop, Telephone/mobile phone and Scooter / Car	0.58	0.80	0.52	0.58	0.81	0.65	0.76	0.64	0.50	1.00

It is evident from Table 1, that urbanisation is strongly correlated with per capita income and households having Drinking Water Facility (Tap). Even the factors like Households with TV, Computer/Laptop, Telephone/mobile phone and Scooter/ Car, electrified household premises and Households having latrine facility within the premises show positive correlation with urbanisation, whereas, indicators like Households availing banking services, Urban Female Literacy and Urban Literacy show moderate correlation. Theoretically, the correlation coefficient should be limited to describing the association between

two variables and not in a cause-and-effect relationship. Correlation measures association. But association does not necessarily show causation. However, the R-squared which measures the coefficient of multiple determination for multiple regression for these variables (human development and modern facilities) is 55 percent ($R^2 = 0.5471$).⁴ The correlation between urbanisation and HDI is 0.58, which indicates a moderate positive correlation. Thus, an inference could be drawn that a better HDI is also an important factor associated with urbanisation.

Pattern of Urbanisation in Selected States of India:

For understanding the dynamics of urban development in a vast country like India, it is important to examine the changes in the levels and pace of urbanisation across the states. A preliminary analysis of data pertaining to incidence of urbanisation in India indicates that the process and progress of urbanisation in our country is in conformity with the same in other developing countries.⁵ The imbalance in the occurrence of urbanisation is visible at two levels, i.e., at the national level and at state levels. At the national level, six developed states, Gujarat, Karnataka, Maharashtra, Tamil Nadu, Punjab and West Bengal continue to account for more than the national average for the four continuous decades. These six states had a major share of

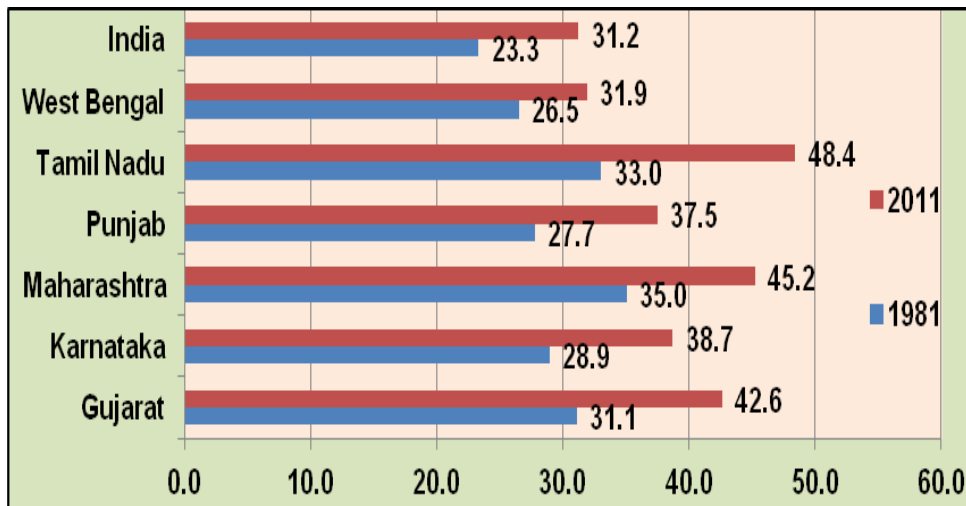
urban population compared to other states lying below in the ranking ladder. Further, as regards the national average, these six states have been consistently above the national average. Year-wise statistics in Table 2 reveals this fact:

Table 2. State of Urbanisation in Six States of India (%)

States/India	1981	1991	2001	2011
(1)	(2)	(3)	(4)	(5)
Gujarat	31.1	34.4	37.4	42.6
Karnataka	28.9	30.9	34.0	38.7
Maharashtra	35.0	38.7	42.4	45.2
Punjab	27.7	29.7	33.9	37.5
Tamil Nadu	33.0	34.2	44.0	48.4
West Bengal	26.5	27.4	28.0	31.9
India	23.3	25.7	27.9	31.2

Source: Census of India, Various reports.

Figure 1. Urbanisation Rate between Four Decades (1981 to 2011)



At the state level, the pattern of urbanisation is very diverse, but economically advanced states more or less show higher levels of urbanisation (Figure 1). All the southern states, along with Punjab, Haryana, Gujarat, Maharashtra and West Bengal, have higher urbanisation levels than the national average, but small states like Goa continue to top the list among states (62% urban), followed by Mizoram (52%). Among the major states, Tamil Nadu continues to be ahead of the others, with levels of urbanisation at 48% in 2011. States which lag behind are Himachal Pradesh at the bottom with a 10% level of urbanisation, followed by Bihar (11%), Assam (14%) and Orissa (17%). Other states like Uttar Pradesh, Rajasthan, Madhya Pradesh, Chhattisgarh and Jharkhand also continue to have lower levels of urbanisation than the national average [Bhagat, 2011].

Among the six size classes of urban areas specified by the Census authorities, Class I urban areas with a population of 100,000 and above account for the largest share of population. The data given in the following Table supports this idea:

Table 3. Urban population in Class I urban areas (%)

States/India	1981	1991	2001
(1)	(2)	(3)	(4)
Andhra Pradesh	53.69	66.88	75.31
Gujarat	57.92	66.43	76.50
Karnataka	58.60	64.60	67.20
Maharashtra	75.24	77.85	79.70
Tamil Nadu	62.19	65.96	56.35
West Bengal	76.84	81.71	83.54
India	60.32	64.89	68.67

Source: Oxford Handbook of Urbanisation in India, First Edition, pp 65-68

This tendency of concentrating in Class I size urban areas is also seen among the larger states having relatively low incidence of overall urbanisation (Table 4).

Table 4. Urban population in Class I urban areas with low urbanisation (%)

States/India	1981	1991	2001
(1)	(2)	(3)	(4)
Bihar	54.12	52.62	59.31
Madhya Pradesh	46.84	50.38	55.77
Odisha	41.63	44.43	48.41
Rajasthan	46.52	50.09	57.23
Uttar Pradesh	51.49	55.99	62.16
India	60.32	64.89	68.67

Source: Oxford Handbook of Urbanisation in India, First Edition, pp 65-68

The average level of urbanisation in these five states has been consistently lower than the national average over the past three decades but even then the feature of concentrating in Class I size urban areas is also seen among these states having relatively low incidence of overall urbanisation.

Urbanisation in Bihar: an overview

Bihar has always remained a significant player in the economic and political history of contemporary India. Ancient and medieval urban centres have served as engines of economic growth of the country. As a region of three ancient Mahajanpadas, namely, Anga, Magadha and Vrijji, the state has long history of urban centres. Rajgir, Patliputra, Champa and Vaishali, as capitals of the ancient kingdom have noticed some urban characters in the existing literature. With the increase in agricultural surplus, the historical *kasbahs* emerged as places of exchange/trade during the colonial period and were given urban status later. No official data exists for urban population during Pre-Colonial period but some historical evidences do explain contemporary urban life and economy. At the beginning of the twentieth century, around 11 per cent of India's population was living in urban areas whereas Bihar had only 4 per cent of urban population [Kumar and Punia, 2014, Pp. 32-42].

The concept of 'subaltern' urbanisation refers to the growth of settlement agglomerations, whether denoted urban (in the present instance by the Census of India) or not, "that are independent of the metropolis and autonomous in their interactions with other settlements, local and global" [Denis et al., 2012, Pp. 52-62]. Bihar continues to be one of the lowest urbanised states of India. The state seems to be representing the 'subaltern' character,⁶ where it reflects cultural milieu, social disparities and mixed economy across emerging large villages. In the context of Bihar, urban clusters like Phulwari sharif, Bakhtiarpur, Dina-pur Nizamat, etc., in Patna district are instances of subaltern urbanisation. "The deeper roots of the subaltern urban settlement mean that their growth not only helps the urban poor, but also the rural poor in the vicinity".⁷ This is because the subaltern urban character of these settlements is surrounded by rural area that it supplements these urban facilities to the neighbouring rural poor as well.

The level of urbanisation in Bihar had been considerably low between the selected periods.

Out of 29.8 million population, only 2.5 million was urban population in 1961; in 2011, after 6 decades, when total population of Bihar was 104.1 million, only 11.7 million were urban population. Regarding the share in total national population, it is observed that, Bihar's population share lies between 7.0 to 8.6 percent (see Table 5) pushing the state to third position in population ranking. But the share of urban population is even less than half of the share of total population (Table 5). Further, during the period 1971-81, the decadal growth of urban population was markedly higher than India. Excluding 1991, the decadal growth of urban population has always performed well. But even then, Bihar is second lowest urbanised state. This paradox needs to be answered. It is worth noting that Bihar's urban population grew at a much faster and high pace during the decade of 1971-1981. Urban population has mostly grown at a lower pace than the country's urban population in the earlier two decades but has started growing at a faster pace than the country's urban population, during the last two decades.

Table 5. A glance of Urban Population: India and Bihar

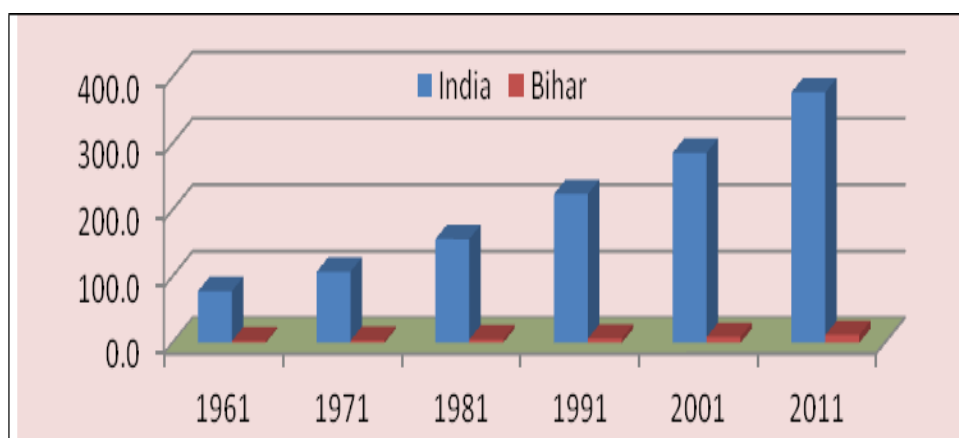
Census Year	Total Population (Million)		Urban Population (Million)		Percentage Share of Bihar's Population in India's Population		Decadal Growth of Urban Population	
	India	Bihar	India	Bihar	Total	Urban	India	Bihar
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1961	424.0	29.8	77.6	2.5	7.0	3.2	-	-
1971	529.7	41.3	107.0	3.3	7.8	3.1	37.9	32.0
1981	658.2	51.0	156.0	5.0	7.8	3.2	45.8	51.5
1991	871.6	62.5	224.0	6.5	7.2	2.9	43.6	30.0
2001	1028.7	82.9	286.0	8.6	8.1	3.0	27.7	32.3
2011	1210.6	104.1	377.0	11.7	8.6	3.1	31.8	36.0

Source: Compiled by the authors

Growth of Towns: a key indicator

The absolute urban population of Bihar was 2.5 million in 1961 which increased to 11.7 million in 2011, showing an increase of more than 4 folds. On the basis of Table 6, it is observed that state reported 84 out of 2330 towns of India. The

number of towns recorded an increase from 1981. However, during 2001 and 2011, there emerged 72 new towns in the state (Table 6). In spite of this, Bihar is still lagging behind the rest of India in terms of majority of development indicators, particularly urbanisation.

Figure 2. Urban Population (Million)**Table 6. Growth of Towns in Bihar and India**

Census Year	No. of Towns		% of Urban Population	
	India	Bihar	India	Bihar
(1)	(2)	(3)	(4)	(5)
1961	2330	84	18.3	7.4
1971	2297	96	20.2	8.0
1981	3245	111	23.7	9.8
1991	3609	124	25.7	10.4
2001	5161	127	27.8	10.5
2011	7935	199	31.2	11.3

Source: Compiled from Census of India

An important feature of urbanisation in Bihar is dualism- urban growth at macro level is slowing but in class I cities it is increasing. An analysis of the distribution of urban population across size categories reveals that the process of urbanisation in Bihar has been large city oriented. This is apparent from a high percentage of urban population being concentrated in class I cities, which has gone up systematically over the decades in the last century. The massive increase in the percentage share of urban population in class I

cities from 34.9 percent in 1961 to 57.5 percent in 2011 has often been attributed to faster growth of large cities, without taking into consideration the increase in the number of these cities. Undoubtedly, the faster demographic growth is an important factor responsible for making the urban structure top heavy. Table 7 reports the growth rates for different categories of towns during the 1960s and the subsequent decades. In the context of demographic dominance of urban scene by class I cities, it is important to note that there were only 5 Class I cities in 1961 that have gone up to 26 in 2011. While a number of lower order towns have graduated to class I category, the process of rural settlements acquiring urban characteristics has been weak. However, Class I cities in the state are experiencing higher population growth compared to other categories (except Class VI) due to aerial expansion as well as in-migration. A large number of satellite towns have emerged in the vicinity of these cities. The tendency of the urban population to concentrate in Class I cities is much more pronounced. Population size class-wise distribution has undergone a marked change between 1961 and 2011 (Table 7). Towns with population above 20,000, (i.e., town categories I, II and III)

accounted for about 35 percent of the total towns (29 out of 84) in the year 1961. By 2011, the relative share of these towns had increased to about 65 percent (130 out of 199). In these 6 decades, there was an addition of 88 towns in the categories of I to IV. However, even towns in V and VI categories experienced an increase in their absolute number by 27 towns between 1961 and 2011. This is a good sign for Bihar as this is pointing towards the fact that more and more

villages have also been transformed into smaller towns. Regarding the population share, it may be noted that between 1961 and 2011, there was 23 percentage point increase in population of class I towns. But for other five categories, the increase is negative. Thus, it can be interpreted that the population has a tendency of shifting towards Class I town even in the developing state like Bihar.

Table 7. Growth of Towns in Bihar

Years	Share of urban population in Census by class size						No of Towns by class size					
	I	II	III	IV	V	VI	I	II	III	IV	V	VI
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2011	57.45	15.56	21.60	2.84	2.25	0.30	26	28	76	22	38	9
2001	56.10	15.86	24.32	3.42	0.31	0.00	19	19	67	18	4	-
1991	44.36	22.01	25.77	7.78	0.08	-	11	20	59	33	1	-
1981	45.86	17.06	23.91	12.00	1.17	-	10	13	42	39	7	-
1971	39.93	13.18	25.38	17.78	3.30	0.42	7	6	27	40	13	3
1961	34.86	17.48	21.65	19.76	5.91	0.33	5	6	18	35	18	2

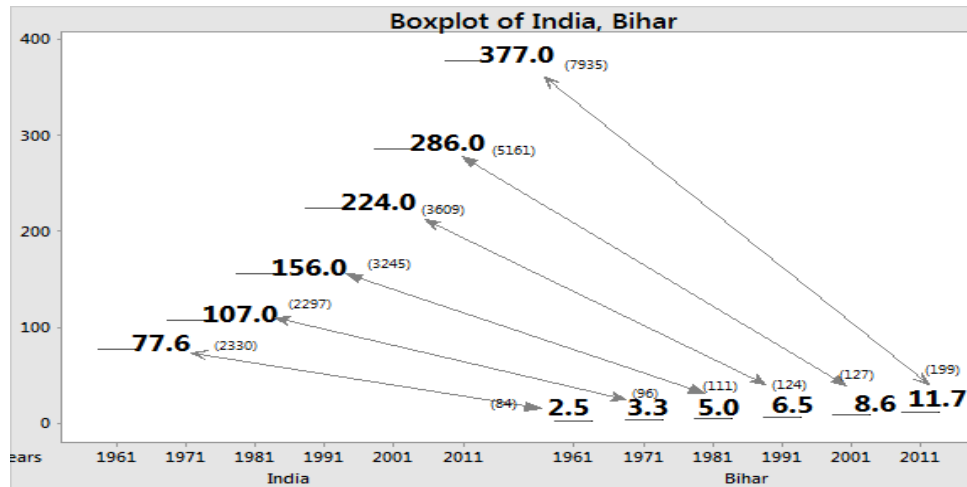
Source: Compiled from Census of India

High urban growth was, however, registered in relatively underdeveloped states, viz., Bihar, Uttar Pradesh, Rajasthan, Orissa and Madhya Pradesh, the states that have low percentages of urban population [Kundu, 2006, Pp. 27-41]. This means that the relationship between urban growth and economic development is generally negative. However, some of the developed states like Maharashtra and Haryana are exceptions, as they record urban growth rates also higher than the country average. The urbanisation in the country has been characterised by a dual nature. The developed states attracted population in urban areas due to industrialisation and infrastructure

investment. Interestingly, the less developed States like Bihar too, particularly their rural districts, that is, districts having predominantly rural population earlier, and small and medium towns, experienced rapid urban growth. This can partly be attributed to government sponsored infrastructural development programmes.

The Figure 3 shows that with the increase in number of towns, the gap between India and Bihar is gradually increasing in the succeeding decades. This implies that with development which is indicated by urbanisation, the economic inequality between Bihar and India is increasing.

Figure 3. Growth in number of towns in India and Bihar



District Level Analysis:

Bihar has a total geographical area of 93.6 lakh hectares. There are nine Regional Administrative Divisions in Bihar, namely, Patna, Magadh, Saran, Tirhut, Darbhanga, Munger, Bhagalpur, Kosi and Purnea. Patna, Munger and Tirhut divisions comprise six districts each. Purnea division has four districts and Magadh has five districts. Similarly, Saran, Darbhanga and Kosi have three districts each. Bhagalpur is the only division which comprises of two districts. Patna division has reported the highest urbanisation (22.67 per cent) followed by Munger (15.26 per cent) and Bhagalpur (13.28 per cent). Saran (7.10 percent) and Darbhanga (5.46 percent) divisions have registered the lowest urbanisation. The regional picture of urbanisation in Bihar in 1961 clearly outlines the overpowering dominance of Patna division which alone accounts for the highest level of urbanisation, i.e., 13.39 per cent. The next higher level of urban population occurred in Munger and Bhagalpur divisions accounting for 11.64 per cent and 10.91 per cent

urban population, respectively. On the other hand, Saran (4.18 percent) and Kosi (3.57 percent) divisions lie in the lower steps of the ladder. Divisions like Magadh, Purnea and Tirhut have maintained a middle position in the ladder throughout these six decades. However, Kosi has shown a remarkable improvement by moving from the lowest position (3.57 percent) in 1961 to fifth position (10.51 percent) in 2011. Data analysis shows that the regional distribution of population in Bihar has been lopsided. The growth of class I cities was faster than other cities of different classes. An analysis of the two time periods clearly reflects the dominance of Patna division followed by Munger and Bhagalpur divisions. There has not been any remarkable change in the regional pattern of urbanisation as Patna leads the list throughout the six decades.

Tables A1, A2 (Appendix) show the level of urbanisation in nine divisions of Bihar and A 3 (Appendix) and Table 8 show the urbanisation status in 38 districts of the state.

Table 8. Classification of Districts by Rate of Urbanisation (2001 and 2011)

Rate of Urbanisation	2001	2011
(1)	(2)	(3)
Upto 4.0	Kaimur (3.2), Madhubani (3.5), Banka (3.5), Samastipur (3.6),	Samastipur (3.5), Banka (3.5), Madhubani (3.7), Kaimur (4.0)
4.1-8.0	Sheohar (4.1), Madhepura (4.5), Begusarai (4.6), Sheohar (4.3), Madhepura (4.4), Supaul (4.7), Khasi (5.1), Siwan (5.5), Sitamarhi (5.7), Khagaria (6.0), Araria (6.1), Gopalganj (6.1), East Champaran (6.4), Vaishali (6.9), Jehanabad (7.4), Nawada (7.4), Arwal (7.4), Jamui (7.4)	Sheohar (4.3), Madhepura (4.4), Supaul (4.7), Khagaria (5.3), Siwan (5.5), Sitamarhi (5.6), Araria (6.0), Gopalganj (6.3), East Champaran (6.4), Vaishali (6.7), Arwal (7.4)
8.1-12.0	Darbhanga (8.1), Saharsa (8.3), Aurangabad (8.4), Purnea (8.7), Katihar (9.1), Buxar (9.2), Saran (9.2), Muzaffarpur (9.3), West Champaran (10.2), Kishanganj (10.0),	Jamui (8.2), Saharsa (8.2), Katihar (8.9), Saran (8.9), Aurangabad (9.4), Buxar (9.6), Nawada (9.7), Darbhanga (9.7), Muzaffarpur (9.8), West Champaran (10.0), Kishanganj (10.0), Purnea (10.4), Jehanabad (12.0)
12.1-16.0	Rohtas (13.3), Gaya (13.7), Bhojpur (13.9), Lakhisarai (14.7), Nalanda (14.9), Sheikhpura (15.5)	Gaya (13.1), Bhojpur (14.3), Lakhisarai (14.3), Rohtas (14.4), Nalanda (15.9)
16.1-20.0	Bhagalpur (18.7)	Sheikhpura (17.1), Begusarai (19.2), Bhagalpur (19.8)
> 20	Patna (41.6), Munger (27.9)	Patna (43.5), Munger (28.3)

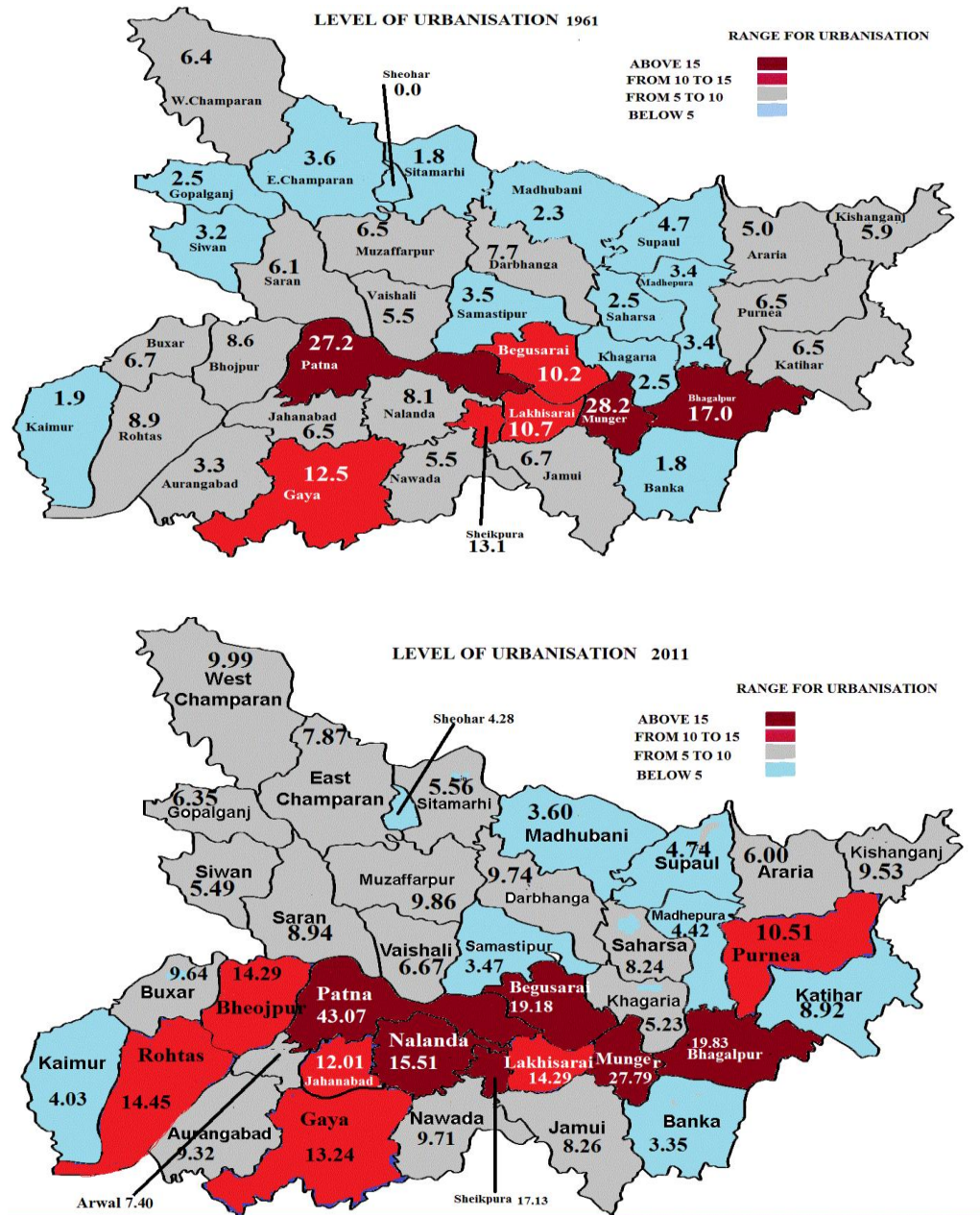
Note: Number in parentheses indicates Urbanisation Rate

Interestingly, between 1961 and 2011, the growth of urbanisation has been only 3.88 percent. In 2011 also, Sheohar, Banka and Kaimur lie in the lowest rung of urbanisation as it was in 1961 (Figure 4). However, in 2011, the level of urbanisation was the highest in Patna (43.1 percent) making it the lead district in urbanisation compared to Munger (28.2 percent) in 1961. Thus, over the past five decades, there has been absolute rise in the urbanisation level. In 1961, level of urbanisation was above 15 percent in three districts, namely, Munger, Patna and Bhagalpur. But after five decades, the six districts (Patna, Munger, Bhagalpur, Begusarai, Sheikhpura and Nalanda) were above 15 percent. Thus, three districts, Begusarai, Sheikhpura and Nalanda were benefited districts.

The division wise distribution of towns by class size is shown in Table A4 (Appendix). Patna is the only division which shows gradual increase

in Class I towns. In the case of the other divisions, the number of class 1 towns remained almost stagnant for four decades (1961-1991). Between 2001 and 2011, many divisions like Tirhut, Purnia, Magadh, Munger and Saran have shown better performance as many class II cities became class I cities. Regarding, class II and III towns also, Patna division is the best performer, followed by Tirhut comprising W. Champaran, E. Champaran, Muzaffarpur, Sitamarhi, Sheohar and Vaishali districts and Munger Divisions. Another remarkable fact is that unlike the developed states, the number of urban centres, i.e., Class V and VI are also increasing. This is a good sign of development as it proves that soon, towns of these classes will move up the class ladder which will help some more villages to get transformed into urban centres. Definitely, this change will help in development of Bihar, where most of the districts are left far behind in the race of urbanisation.

Figure 4. Transition of Urbanisation in Bihar (1961 to 2011)



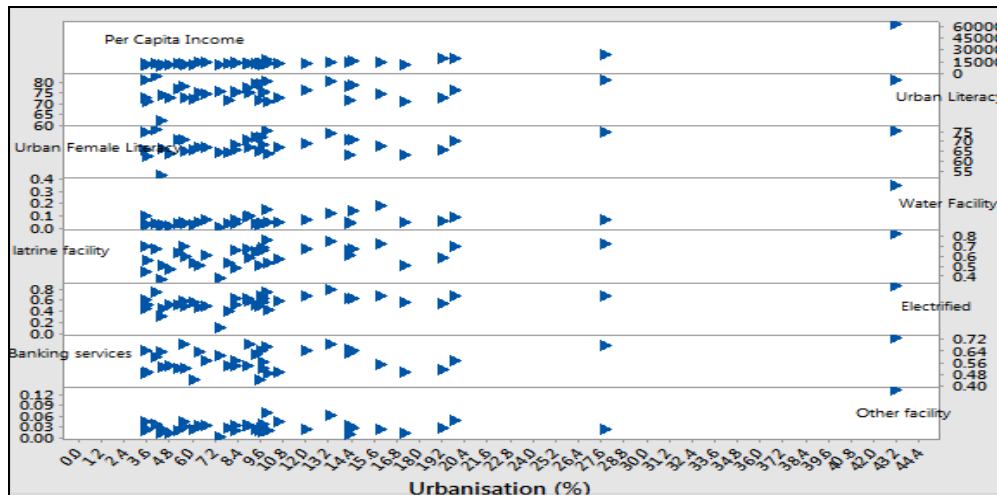
Result and Discussion:

In Bihar, the concentration of urban population in Class-I cities continued to increase during 1981 and 2011. However, the urban centres like Class V and VI towns show a fluctuating trend in these six decades. But in 2011, there has been a remarkable increase in Class V towns.

It is evident from Table 1, that there is a strong correlation between urbanisation and per capita

income (0.86) followed by the availability of the drinking water facility (0.72). On the basis of Table A5 (Appendix), an inference could be drawn that the districts leading in urbanisation are Patna, Munger, Bhagalpur, Begusarai and Sheikhpura though the level of urbanisation is very low in Bihar as a whole. As is clear from figure 5, only a few districts are above the state average in all the indicators, but a maximum number of districts are lying below the average line.

Figure 5. District-wise Scenario of Urbanisation viz Human Development and Modern Amenities



Urbanisation rates in 11 districts are more than the state average while seven districts are above the state average in terms of HDI, nine districts in term of electricity facility, 15 districts in term of banking facility and only three districts in terms of modern facilities. As is evident, the district leading in all the indicators is Patna. But, there is a big gap between the better performing and the low performing districts according to the selected indicators. Thus, still the state has to take strides to achieve the goal of urbanisation in all districts. However, next to Patna, the other districts like Gaya, Muzaffarpur, Nalanda, Bhagalpur, Munger, Rohtas and Kaimur are performing

better in our study on the basis of these selected indicators. Out of the total 38 districts, this number barely signifies any development. Patna being the state capital, all growth is centred around Patna, whereas, the other districts are left far behind. The study has also observed the relation of urbanisation with HDI (Table A6) (Appendix). It is apparent that if the indicators of human development show improvement, a higher level of urbanisation could be achieved, because the concentration of the well-off people (with high per-capita income) tends to be associated with better facilities. The basic infrastructure (water supply, electricity availability, banking

services, etc. (Data on the percentage of villages with all-weather roads is not available.), educated man power (especially women) and modern facilities (of communications and transport, such as use of internet, mobile, motor bike, etc., represented in this study by possession of TV, Computer/Laptop, Telephone/mobile phone and Scooter/ Car) attract investment in the locality (Patna, Munger, Nalanda, Gaya, Begusarai, Rohtas etc.). Thus, the non-farm economic activities also contribute to increasing the pace of the economic development. In this backdrop, the increase in the population size and the contribution of the non-farm economy leads to the development of the locality. Based on these analyses, the paper finds out that Bihar is far behind in the race of urbanisation and until and unless, the basic needs of human beings like income, education, health, sanitation, banking and modern means of communications and transport are not improved in a comprehensive and inclusive manner, the state will lag behind in urbanisation as well.

Conclusion:

Urbanisation is a conversion process. It is a process of socio-economic transformation in which rural populace move towards urban areas attracted by non-farm activities, improved human development facilities and modern amenities. With more and more developmental and modernisation facilities, the process will strengthen and possibly become more wide-spread. As the study finds out, although Patna, being a state capital, leads in most of the indicators, other districts are way behind. Out of 38, only seven districts are better performers in the selected indicators (HDI and modernisation). Thus, it is clear that the process of urbanisation, even after six decades is still very slow and uneven. Only, a few districts like Patna, Munger, Bhagalpur, Begusarai, Sheikhpura and Nalanda are climbing the ladder (with more than 15 percent of urbanisation). Academics or policy makers may or may not agree with the existing census definition of Indian 'Urban area' but for a villager any place which

provides them with various types of services like market, education, transport or electricity is a Shahar (town). Rapid increase of built-up area in peri-urban land use is a clear sign of urban sprawl. Once the evidence of agglomeration exists, the state should examine land use pattern. Existing lethargy in governance does not prioritise the nature of problems arising due to the process of social transformation or increasing population in the peri-urban areas. Socio-economic transformation is a dynamic process hence there is a need for regular vigil to monitor this process. Growth story of Bihar cannot be sustainable unless all the districts of Bihar are developed on equal lines so that at least all the urban areas in the districts of Bihar can provide better quality urban facilities to poor. These facilities should also be provided in the rural areas so that the rural locale could be developed at par with urban areas and gap between rural-urban divide could be reduced. Bihar's urban development policy requires to pay more attention towards the process of urbanisation, urban governance and infrastructure; improved human development indicators and modern amenities of transportation and communication so that the rural areas could be transformed into urban centres.

REFERENCES

- Ahluwalia, I. J., 2013; 'An Opportunity for Urbanisation in Bihar' in N. K. Singh and Nicolas Stern (ed.), *The New Bihar: Rethinking Governance and Development*, Harper Collins India
- Ahluwalia, S.M., 2011; 'Prospects and Policy Challenges in the Twelfth Plan' *Economic and Political Weekly*, Vol. 46, No. 21.
- Bhagat, R. B., 2011; 'Emerging Pattern of Urbanisation in India', *Economic and Political Weekly*, Vol. 46, No. 40.
- Bhagat, R. B., 2005; 'Rural-Urban Classification and Municipal Governance in India', *Singapore Journal of Tropical Geography*, Vol. 26, No. 1.
- Breese, G., 1969; 'Urbanisation in Newly Developing Countries', Prentice Hall, New Delhi.
- Datta, Pranati, 2006; 'Urbanisation in India', Regional and Sub-Regional Population Dynamic Population Process in Urban Areas European Population Conference 21-24 June, 2006.
- Denis, E., P. Mukhopadhyay, M. H. Zerah, 2012; 'Subaltern Urbanisation in India', *Economic & Political Weekly*, Vol. 47, No. 30.
- Govt. of Bihar, 2011; 'Bihar Municipal Act, 2011', Urban Development Department, Patna.

- Hoselitz, Bert F., 1962; 'The Role of Urbanisation in Economic Development; Some International Comparisons', in Turner, Roy (ed.), *India's Urban Future*, Oxford University Press, Bombay.
- Kumar Rajnish and Milap Punia, 2014; 'Urbanisation in Bihar: Need to Break Stigma', *Journal of Asian Network for GIS-based Historical Studies*, Vol. 2, December.
- Kundu, Amitabh, 2006; 'Trends and Patterns of Urbanisation and their Economics Implications', Prem Kalra and Anupam Rastogi eds., *India Infrastructure Report 2006*, New Delhi: Oxford University Press.
- Kundu, Amitabh, 2011a; 'Politics and Economics of Urban Growth', *Economic & Political Weekly*, Vol. 46, No. 20.
- Ramachandran, R., 1992; 'Urbanisation and Urban System in India', Paperback edition.
- Registrar General and Census Commissioner, 2006; 'Population Projections for India and States 2001-2026', *Report of the Technical Group on Population Projections Constituted by National Population Commission*, Office of the Registrar General and Census Commissioner, New Delhi.
- Sharma, A. N., 2013; 'An Opportunity for Urbanisation in Bihar', N. K. Singh and Nicolas Stern (Ed.) *The New Bihar: Rethinking Governance and Development*, Harper Collins India.
- Sivaramakrishnan, K.C, Amitabh Kundu and B. N. Singh, 2005; 'Handbook of Urbanisation in India', First edition, Oxford University Press, New Delhi.
- Tilak, Abhay, 2013; 'Urbanisation in Maharashtra: 1961-2001', *Journal of Indian School of Political Economy*, Volume XXV, January - December 2013.
- United Nations, 2014; 'The World Urbanisation Prospects: The 2014 Revision', Department of Economic and Social Affairs Population Division, New York.
- Wirth, Louis, 1938; 'Urbanism as a Way of Life', *The American Journal of Sociology*, Vol. 44, No. 1. July.
- World Bank, 2005; 'Bihar Towards a Development Strategy', Working Paper No-32819, World Bank, Washington DC.

Appendix

Table A 1. Division-wise Level of Urbanisation (%)

Divisions	1961	1971	1981	1991	2001	2011
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Patna	13.39	15.02	19.42	20.12	21.60	22.67
Magadh	7.27	7.63	9.12	9.54	10.18	11.12
Saran	4.18	4.20	6.05	6.93	7.13	7.10
Tirhut	4.69	5.23	6.21	7.46	7.63	8.03
Darbhanga	4.32	4.43	5.22	5.66	5.03	5.46
Munger	11.64	11.87	13.01	12.69	10.73	15.26
Bhagalpur	10.91	10.61	11.72	12.12	12.62	13.28
Kosi	3.57	4.53	5.72	6.80	5.91	10.51
Purnia	6.01	6.34	8.39	8.43	8.38	8.74
Bihar	7.41	7.97	9.84	10.40	10.50	11.29

Source: Compiled from Census of India

Table A 2. Division-wise Decadal Growth Rates of Urban Population (%)

Divisions	1961-71	1971-81	1981-91	1991-2001	2001-2011
(1)	(2)	(3)	(4)	(5)	(6)
Patna	21.53	25.86	20.81	27.00	22.70
Magadh	22.19	22.72	23.20	30.72	24.40
Saran	19.37	22.11	23.40	25.86	21.18
Tirhut	17.67	23.45	24.33	29.37	28.53
Darbhanga	18.60	23.25	24.94	27.37	23.44
Munger	20.78	22.59	22.85	27.84	25.60
Bhagalpur	22.21	25.36	22.17	25.90	25.81
Kosi	24.50	25.68	23.67	30.52	28.03
Purnia	27.60	27.46	25.39	33.21	29.08
Bihar	20.88	24.16	23.38	28.62	25.42

Source: Compiled from Census of India

Table A 3. Rate of Urbanisation

(in percent)						
Districts	1961	1971	1981	1991	2001	2011
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Patna Division						
Patna	27.2	30.2	37.1	38.0	41.6	43.07
Nalanda	8.1	9.3	13.6	14.8	14.9	15.91
Bhojpur	8.6	9.4	12.5	13.1	13.9	14.29
Buxar	6.7	7.1	7.9	8.4	9.2	9.64
Rohtas	8.9	10.2	13.3	13.9	13.3	14.45
Kaimur	1.9	3.4	2.5	2.8	3.3	4.03
Magadh Division						
Gaya	12.5	12.2	13.8	13.4	13.7	13.24
Jehanabad	6.5	6.9	8.7	12.1	12.1	12.01
Arwal	0.0	0.0	0.0	0.0	0.0	7.40
Nawada	5.5	5.6	6.6	7.0	7.7	9.71
Aurangabad	3.3	4.9	6.9	7.7	8.4	9.32
Saran Division						
Saran	6.1	5.8	8.1	9.1	9.2	8.94
Siwan	3.2	3.5	4.4	5.3	5.5	5.49
Gopalganj	2.5	2.6	5.0	5.7	6.1	6.35
Tirhut Division						
W. Champaran	6.4	7.4	7.3	10.1	10.2	9.99
E. Champaran	3.6	3.5	4.7	5.7	6.4	7.87
Muzaffarpur	6.5	6.6	8.1	9.3	9.3	9.86
Sitamarhi	1.8	3.6	5.1	5.9	5.7	5.56
Sheohar	0.0	0.0	0.0	3.7	4.1	4.28
Vaishali	5.5	5.8	6.5	6.7	6.8	6.67
Darbhanga Division						
Darbhanga	7.7	8.1	8.8	8.7	8.1	9.74
Madhubani	2.3	2.3	3.1	3.6	3.5	3.60
Samastipur	3.5	3.3	4.2	5.0	3.7	3.47
Munger Division						
Begusarai	10.2	9.2	10.6	9.8	4.6	19.18
Munger	28.2	27.6	30.0	30.0	27.9	27.79
Sheikhpura	13.1	13.3	16.2	16.4	15.6	17.13
Lakhisarai	10.7	11.2	12.1	12.7	14.7	14.29
Jamui	6.7	6.7	7.1	7.1	7.4	8.26
Khagaria	2.5	6.0	5.7	6.0	5.9	5.23
Bhagalpur Division						
Bhagalpur	17.0	16.6	18.0	18.0	18.7	19.83
Banka	1.8	1.8	2.1	3.5	3.5	3.50
Koshi Division						
Saharsa	2.5	3.2	6.4	7.1	8.3	8.24
Supaul	4.7	4.6	4.9	6.8	5.1	4.74
Madhepura	3.4	5.6	6.0	6.5	4.5	4.42
Purnia Division						
Purnea	6.5	6.8	8.4	8.4	8.7	10.51
Kishanganj	5.9	6.0	9.9	10.1	10.0	9.53
Araria	5.0	5.3	6.3	6.3	6.2	6.00
Katihar	6.5	7.0	9.4	9.4	9.2	8.92
Bihar	7.4	8.0	9.8	10.4	10.5	11.3

Source: Various Census, RGI

Table A 4. Divisionwise Distribution of Towns by Class Size

State/Division	Class	2011	2001	1991	1981	1971	1961
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Patna	I	7	6	3	3	2	1
	II	8	4	5	4	1	2
	III	16	17	15	10	8	6
	IV	6	4	8	10	9	5
	V	10	-	-	3	2	3
	VI	3	-	-	-	1	1
Magadh	I	3	1	1	1	1	1
	II	3	3	2	-	-	-
	III	10	7	6	5	2	1
	IV	1	2	4	5	5	5
	V	2	1	-	1	4	3
	VI	1	-	-	-	-	-
Saran	I	2	2	1	1	-	-
	II	1	1	1	1	1	1
	III	9	7	6	4	1	1
	IV	1	2	4	4	4	3
	V	1	-	-	-	1	1
	VI	-	-	-	-	-	-
Tirhut	I	5	4	1	1	1	1
	II	2	2	5	3	1	-
	III	17	13	9	6	4	3
	IV	7	4	7	4	8	7
	V	7	-	-	3	-	2
	VI	1	-	-	-	2	1
Darbhanga	I	1	1	1	1	1	1
	II	3	2	2	-	-	-
	III	4	3	2	2	2	2
	IV	1	2	3	4	2	2
	V	7	-	-	-	1	1
	VI	1	-	-	-	-	-
Munger	I	3	1	1	1	1	-
	II	6	4	3	2	1	2
	III	8	7	8	8	5	3
	IV	2	1	1	2	5	5
	V	8	1	1	-	1	1
	VI	1	-	-	-	-	-
Bhagalpur	I	1	1	1	1	1	1
	II	1	-	-	-	-	-
	III	5	5	4	3	-	-
	IV	2	-	2	1	3	2
	V	1	1	-	-	1	2
	VI	2	-	-	-	-	-
Kosi	I	1	1	-	-	-	-
	II	2	1	1	1	-	-
	III	2	2	3	2	2	-
	IV	1	2	2	3	3	3
	V	1	-	-	-	1	3
	VI	-	-	-	-	-	-
Purnia	I	3	2	2	1	-	-
	II	2	2	1	2	2	1
	III	5	6	6	2	3	2
	IV	1	1	2	6	1	3
	V	1	1	-	-	2	2
	VI	-	-	-	-	-	-
Bihar	I	26	19	11	10	7	5
	II	28	19	20	13	6	6
	III	76	67	59	42	27	18
	IV	22	18	33	39	40	35
	V	38	4	1	7	13	18
	VI	9	-	-	-	3	2

Table A 5. Urbanisation and Percentage households (%) with the specified facility

District	In Value					Percentage households (%) with the specified facility				
	Urbanisation (%)	Urban Households	Per Capita Income (2011-12)	Urban Literacy	Urban Female Literacy	Percentage Households having Drinking Water Facility (Tap)	Percentage Households having latrine facility within the premises	Percentage Electrified Households	Percentage Households availing banking services	Percentage Households with TV, Computer/Laptop, Telephone/mobile phone and Scooter/Car
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Patna Division										
Patna	43.07	429424	63063	81	75.59	35	83	87	74	13
Nalanda	15.91	75750	12561	74.6	67.87	19	74	69	55	3
Bhojpur	14.29	59431	12459	78.1	71.02	4	67	64	65	4
Buxar	9.64	26483	11289	79.4	72.70	4	66	69	64	3
Rohtas	14.45	69951	13909	78.4	71.32	14	67	64	65	3
Kaimur	4.03	10189	10412	82.6	76.26	4	68	75	60	4
Magadh Division										
Gaya	13.24	89642	11897	80.2	74.45	12	76	79	69	6
Jehanabad	12.01	21820	11182	76.3	68.84	6	68	68	64	3
Arwal	7.40	8453	9125	75.3	64.45	0	38	10	60	1
Nawada	9.71	33344	9560	75.1	68.71	3	69	56	52	2
Aurangabad	9.32	36862	11012	79.1	72.51	4	65	53	62	2
Saran Division										
Saran	8.94	55873	10615	75.1	67.24	10	59	59	69	3
Siwan	5.49	28606	10685	77.9	71.22	5	70	59	69	4
Gopalganj	6.35	25623	12129	75.1	67.01	5	50	47	64	4
Tirhut Division										
Muzaffarpur	9.86	88570	15402	80.2	75.59	15	77	75	67	7
E.Champaran	7.87	71844	10735	71.6	64.63	4	53	41	54	3
W.Champaran	9.99	73107	9971	71.1	63.98	4	54	43	48	2
Sitamarhi	5.56	37048	9538	72.4	65.39	3	60	49	52	3
Sheohar	4.28	5858	7092	62.0	52.68	1	36	30	64	1
Vaishali	6.67	38280	12490	74.2	67.38	6	61	50	58	3
Darbhanga Division										
Darbhanga	9.74	73912	10932	75.7	68.27	4	67	63	57	4
Madhubani	3.60	29991	9241	71.1	62.39	2	55	51	49	3
Samstipur	3.47	28091	10762	80.7	74.89	10	71	62	65	4

(Contd.)

Table A 5. (Concl.d.)

District	In Value					Percentage households (%) with the specified facility				
	Urbanisation (%)	Urban Households	Per Capita Income (2011-12)	Urban Literacy	Urban Female Literacy	Percentage Households having Drinking Water Facility (Tap)	Percentage Households having latrine facility within the premises	Percentage Electrified Households	Percentage Households availing banking services	Percentage Households with TV, Computer / Laptop, Telephone / mobile phone and Scooter/ Car
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Munger Division										
Begusarai	19.18	107175	17587	72.4	65.65	6	58	55	51	3
Munger	27.79	71010	22051	81.0	75.32	7	73	68	68	3
Sheikhpura	17.13	17796	9687	71.0	62.85	4	51	58	49	1
Lakhisarai	14.29	24107	13073	71.3	63.47	5	61	63	63	1
Jamui	8.26	24877	10166	74.9	65.95	6	48	52	54	2
Khagaria	5.23	16106	11515	76.7	71.30	3	64	53	52	2
Bhagalpur Division										
Bhagalpur	19.83	106303	17324	75.9	70.33	9	70	67	57	5
Banka	3.50	13604	9269	72.6	66.06	4	44	45	49	2
Koshi Division										
Saharsa	8.24	28862	12197	75.6	68.33	3	67	63	57	4
Supaul	4.74	20493	8492	72.7	63.64	1	47	52	53	2
Madhepura	4.42	17433	8609	73.5	66.35	2	51	46	53	2
Purnia Division										
Purnea	10.51	66414	10099	72.7	67.07	5	57	60	50	5
Kishanganj	9.53	31948	9928	71.2	65.31	3	50	51	44	2
Araria	6.00	32781	8776	72.1	65.65	2	53	56	44	3
Katihar	8.92	53564	11278	77.3	71.40	9	68	64	54	4
Bihar	11.29	2050625	14574	76.9	70.49	13	68	66	61	6

Source: Census 2011, RGI and Department of statistics and evaluation, Govt. of Bihar
 [In the last column oblique (/) represents or and commas (,) represents and]

Table A 6. Index of Urbanisation, Human Development and Households with the Specified Facility
[It is indexed as per formula given under section of methodology]

District	Index of:				
	Urbanisation (%)	Human Development Index	Electrified Household Premises	Households availing banking services	Households with TV, Computer /Laptop, Telephone/mobile phone and Scooter/ Car
(1)	(2)	(3)	(4)	(5)	(6)
Bihar	0.20	0.57	0.72	0.59	0.39
Patna	1.00	0.98	1.00	1.00	1.00
Nalanda	0.31	0.55	0.77	0.38	0.15
Bhojpur	0.27	0.53	0.70	0.73	0.24
Buxar	0.16	0.56	0.77	0.69	0.17
Rohtas	0.28	0.59	0.70	0.70	0.19
Kaimur	0.01	0.64	0.84	0.54	0.27
Gaya	0.25	0.67	0.90	0.85	0.46
Jehanabad	0.22	0.50	0.75	0.69	0.16
Arwal	0.10	0.29	0.00	0.57	0.00
Nawada	0.16	0.47	0.60	0.29	0.11
Aurangabad	0.15	0.55	0.56	0.62	0.15
Saran	0.14	0.45	0.64	0.86	0.23
Siwan	0.05	0.54	0.64	0.85	0.31
Gopalganj	0.07	0.39	0.48	0.67	0.25
Muzaffarpur	0.16	0.71	0.85	0.78	0.52
E.Champaran	0.11	0.34	0.40	0.34	0.18
W.Champaran	0.16	0.32	0.44	0.15	0.12
Sitamarhi	0.05	0.37	0.51	0.28	0.21
Sheohar	0.02	0.00	0.26	0.67	0.06
Vaishali	0.08	0.44	0.52	0.47	0.23
Darbhanga	0.16	0.47	0.70	0.43	0.27
Madhubani	0.00	0.29	0.54	0.20	0.15
Samstipur	0.00	0.64	0.68	0.72	0.30
Begusarai	0.40	0.40	0.58	0.26	0.17
Munger	0.61	0.68	0.76	0.81	0.15
Sheikhpura	0.34	0.29	0.62	0.20	0.06
Lakhisarai	0.27	0.35	0.69	0.65	0.04
Jamui	0.12	0.37	0.55	0.35	0.13
Khagaria	0.04	0.51	0.56	0.28	0.12
Bhagalpur	0.41	0.55	0.75	0.45	0.35
Banka	0.00	0.33	0.46	0.17	0.12
Saharsa	0.12	0.47	0.69	0.46	0.24
Supaul	0.03	0.29	0.55	0.33	0.08
Madhepura	0.02	0.35	0.47	0.32	0.14
Purnea	0.18	0.39	0.65	0.20	0.33
Kishanganj	0.15	0.32	0.53	0.01	0.12
Araria	0.06	0.34	0.60	0.00	0.15
Katihar	0.14	0.56	0.70	0.35	0.23

Source: Census 2011, RGI and Department of statistics and evaluation, Govt. of Bihar

NOTES

1. "Urban" is defined in many different ways and there is no international consensus on how to determine the boundaries of urban areas or identify when a settlement is 'urban', as the diversity of national urban definition shows (UN-DESA 2014a; Mc. Granahan, Satterthwaite 2014). The definition of 'urban' varies from country to country, and, with periodic reclassification, can also vary within one country over time, making direct comparisons difficult. An urban area can be defined by one or more of the following: administrative criteria or political boundaries, (e.g., area within the jurisdiction of a municipality or town committee), a threshold population size (where the minimum for an urban settlement is typically in the region of 2,000 people, although this varies globally between 200 and 50,000), population density, economic function, (e.g., where a significant majority of the population is not primarily engaged in agriculture, or where there is surplus employment) or the presence of urban characteristics, (e.g., paved streets, electric lighting, sewerage). In 2010, 3.5 billion people lived in areas classified as urban (The State of the World's Children 2012, UNICEF).

In India, an urban location is defined as (a) all statutory places with a municipality, corporation, cantonment board or notified town area committee; (b) a place satisfying the following three criteria simultaneously i) minimum population of 5,000; ii) at least 75 % of male working population engaged in non-agricultural pursuits; iii) population density of at least 400 km [UNDESA 2011].

The areas which do not come under urban are defined as rural area.

2. World Urbanisation Prospects, 2014.

3. Urbanism is the study of the characteristic ways of interaction of inhabitants of towns and cities (urban areas)

with the built environment. It is a direct component of disciplines such as urban planning (the physical design and management of urban structures) and urban sociology (the study of urban life and culture).

4. As this study is based on secondary data, we have certain limitations. In order to find out pull factor, implying causality, we need to do a primary survey using randomized controlled trial (RCT).

5. As per World Urbanisation Prospects 2014, urbanisation pattern in regional economies has indicated that urbanisation in developing countries as a whole is more rapid and massive and the share of urban population will increase by more than three times by 2030, thus touching almost 56 per cent from just 18 per cent in 1950. It is predicted that now it is Asia which is on the fast track of rapid urbanisation from an urban population share of 37.1 per cent in 2000, it would reach 54.1 per cent by 2030. The Asian prediction is a follow-up of 17 spectacular urbanisation process experienced by Latin America which has reached the urban population level of 75 per cent from 42 per cent during the second half of the last century.

6. The term subaltern designates the populations which are socially, politically and geographically outside of the hegemonic power structure of the colony and of the colonial homeland.

7. See [Denis et al., 2012], esp. pp. 59-61, to appreciate the dynamics and interaction of economic, social and political factors, such as the higher land cost in larger cities and improvements in connectivity, exemptions on taxes, cheaper power and the absence of the relatively more restrictive urban by-laws and regulations in rural areas, and the interaction of social networks with capital accumulation and knowledge and access to markets beyond the settlement, which drive the process of subaltern urbanisation of the rural settlements.

A REVIEW OF LITERATURE ON "DEMANDS FOR SMALLER STATES IN INDIA: HISTORICAL BACKGROUND AND EMERGING TRENDS"

Sara Mahima George Rejy

The creation of small states in India assumed greater significance post the creation of three new states in 2000. The creation of Telangana very recently has once again thrown open the discourse on viability of small states in India. In the contemporary movements for smaller states, language is no longer the guiding principle. Rather, the thrust of such movements has been mainly developmental issues. The size of the new state may be a crucial factor, but not the sole factor in its creation. In the further division of states, it is essential that attention is paid to local demands, cultural issues and most importantly the economic viabilities of such states.

The creation of new states in India has been a long process. Initially the demand for new states in India was on the basis of language. As a result of these movements, such as the movement for a separate state of Andhra Pradesh, the States Reorganisation Commission had created states on linguistic lines. However, when the creation of states on linguistic basis started to fall apart, a trend towards creation of separate states began on the basis of developmental issues. The present literature review from various sources has identified critical factors guiding movements for separate statehood within the Indian Union.

THE REORGANISATION OF STATES IN INDIA: HISTORICAL BACKGROUND

The British division of Indian Territory was primarily for administrative and commercial convenience. The division of India into provinces during the British rule was fortuitous and had no basis in the earlier Indian history. In doing so, old frontiers were modified and at times retained with minor changes in the structural properties. Before Independence, in 1936, the then Indian government had carved out two provinces, entirely on the basis of homogenous language- Sindh and Orissa. Though many princely states lost their identity after merger with the Indian Union, the integration of these states with the Indian Union was also necessary to achieve effective administration. Besides, the increased number of

princely states could prove dangerous to the political unity and security of the country. The political integration of princely states with the Indian Union united the whole country in one political framework, and removed many administrative drawbacks and financial disparities. Andhra was created out of the Madras Presidency following sustained agitation of a separate Telugu speaking state, culminating in the death of Potti Sriramulu. Then followed the States Reorganisation Commission. In August 1953 Nehru appointed the States Reorganisation Commission (SRC) which submitted its report in October 1955. In 1956, following the recommendations of the States Reorganisation Commission, the territorial boundaries of the states were redrawn. However, in the subsequent decades, along with geo-linguistic and cultural-ideological criteria, the crucial issue of development was also taken into consideration for the division of the states. With the formation of the three new states, namely, Chhattisgarh, Uttarakhand and Jharkhand, new dimensions of and perspectives on state formation, as a critical political practice, have surfaced yet again in contemporary India. [Sarang and Pai, 2011]. Reorganisation of states will perhaps ease the existing situation for the transition period, but in the final analysis it is only the increasing contact between the various parts of India that will cement the sometimes precarious unity of India [Arora, 1956, Pp. 27-30].

**DEMAND FOR SMALLER STATES IN INDIA:
THE CONTEXT OF THE 1990s**

With the creation of Chhattisgarh, Jharkhand and Uttarakhand from the larger states of Madhya Pradesh, Bihar and Uttar Pradesh, respectively, in 2000, the issue of smaller states has once again come to the forefront. However, unlike the earlier cases, in the post-1990s, it is unilingual states that have been divided for other natural and administrative reasons and the demands for smaller states have been propelled by developmental issues rather than linguistic interests.

In the case of Chhattisgarh, the people of this region felt that besides the need for preservation of their distinct socio-cultural identity, a separate state was imperative for development of the region to take place. The people's demand which was expressed through democratic channels contributed greatly to the creation of Chhattisgarh. Although Chhattisgarh has 32 per cent *adivasi* population, the idea of statehood was not born in the predominantly tribal regions. The idea of statehood arose primarily in the plains areas. These areas have a smaller population of *adivasis* and a greater concentration of middle and lower castes categorised as OBCs [Tillin, 2013, Pp. 109-208].

As regards Jharkhand, the demand for a separate state was spearheaded mainly by the tribals, who had dreamt of a separate homeland for centuries. The claims for separate statehood for Jharkhand can be attributed to factors such as preservation and protection of local identity/nationality, exploitation of Jharkhand is by the outsiders, land alienation by outsiders and government, industrialisation leading to displacement of the locals, the immigration of a large number of outsiders leading to outward migration of the locals, the mismanagement of forests and the preservation of local tribal languages and culture.¹

The centralising trend in Indian federalism seems to be responsible for the rising regional aspirations and therefore there is need for greater decentralisation and devolution of power to make people their own masters [Ghosh, 1998]. At the start of the decade of the 1950s, the development profile of the region of Jharkhand was better than that of Bihar as a whole, but gradually deteriorated over the years. It soon reached a point when the growth of development opportunities in the region became stagnant at best and negative at worst. Therefore, with the passing years, the issue of poor performance of the public-policy delivery mechanism further entrenched the links between the issue of a separate state, the Jharkhandi identity, and the development issues [Prakash, 2001, Pp. 198-200]. The tribal aspiration for autonomy in Jharkhand was first dragged on to a regional platform which enabled the execution of an inverse ideological somersault- the construction of nationality on the basis of region. The question of a separate Jharkhandi identity was discussed as if it were a part of geography and not of socio-political anthropology [Raj, 1992, Pp. 200-203].

The movement for the creation of a separate state of Uttarakhand from Uttar Pradesh was guided by the discontentment of the Kumaun-Garhwal region with the fact that the plains areas of this huge state have prospered at the cost of the neglect of the hill people. The chief inspiration behind the Uttarakhand movement was the impulse to give a new direction to nation building and development by strengthening them at the local-regional level [Joshi, 1999, Pp. 3489-3490]. The movement for Uttarakhand was forged on a unity of interests between people of the 'pahar' region [Jayal, 2000, Pp. 4311-4314]. A considerable number of people within the Uttarakhand region were concerned not only with capturing political and administrative power, but also with changing it. There existed a strong belief amongst some, perhaps many, in the hills, that local people should not just secure a greater share of the

domestic and commercial opportunities in the hills, but also that the resource exploitation upon which their livelihoods are based needs to be sustainably managed [Mawdsley, 1999, Pp. 101-112]. The demand for a separate Uttarakhand State was not only a political demand; it was also more of the economic necessity of the people. in view of the prevailing circumstances of the region [Nautiyal, 1996, Pp. 7-12].

Besides the demand for a separate state of Uttarakhand, Uttar Pradesh has also witnessed other movements for separate statehood such as Poorvanchal, Harit Pradesh and Bundelkhand. The debate on small state as a model of development resurfaced in the wake of regional identity versus development debate. There is a relationship between separate statehood and regional aspiration. The demand for separate state for the sake of development and administrative efficiency does not mean a support for separatism. It is not outside the realm of Indian federal structure or constitutional framework. Rather, in another way, it may strengthen the national unity through the process of equitable growth and may provide answers to so many violent critical questions like naxalism [Pandey, 2008, Pp. 341-354]. The demand for Harit Pradesh is intertwined with the politics of region and caste in U.P. and is also spearheaded by a section of the Jats of Western U.P [Singh, 2001, Pp. 2961-2967]. Farmers' suicides in Bundelkhand are a result of several years of neglect of the agricultural sector and industrial backwardness. The demand for a separate state only seeks to satisfy political ends and is no solution to the multiple problems of Bundelkhand's farmers [Verma, A.K. 2011, Pp. 10-11].

The latest entrant to join the small states bandwagon has been Telangana which was created in June 2014. The movement for a separate state of Telangana was part and parcel of a lengthy historical process. The roots of the demand can be traced to more than half a century

back which witnessed systematic and widespread discrimination against the region by the ruling elite of Andhra Pradesh and by the successive state governments. The proponents of a separate state of Telangana claimed that Telangana was converted into an internal colony as a result of the economic development pursued by successive governments. The resources meant for this region were diverted and utilized for development of other regions. The movement for separate statehood sought to articulate the demand for a fair share in the resources. It was an outcome of injustice meted out to the region by the successive governments in Andhra Pradesh. Separation was seen as the only answer to these grievances [Ram, 2007, Pp 90-94]. Nevertheless, the fact of the matter is that while the Telangana region has much more industry than the Andhra region, the coastal Andhra is agriculturally more developed. The developmental model for the Telangana region pursued by the ruling classes both in Andhra Pradesh and the Centre resulted in increasing regional disparities and haphazard urbanisation of some areas which, in turn, resulted in unbalanced and unplanned growth. The Telangana movement attempted to resolve such contradictions through the formation of a separate state. [Haragopal, 2010, Pp 51-60]. The tribal people of Telangana region perceived that they have been continuously neglected and deprived of their legitimate rights and entitlements right from the time of the Nizam's rule. The "democratically elected governments" dominated by the upper castes and landlords continued to exploit them [Ramdas, 2013, Pp. 118-122]. The roots of the Telangana people's movement for a separate state can also be traced to a historical context, which includes a developmental model pursued by the ruling classes both in Andhra Pradesh and the Centre. The movements in Telangana for separate statehood attempted to resolve such contradictions through the formation of a separate state [Forrester, 1970, Pp. 5-21]. From the historical point of view, the emergence of the separate Telangana movement of Andhra Pradesh

was a testimony to the failure or even death of regional historiography or history consciousness, out of which the Telugu people's identity once sought to evolve [Keiko, 2010, Pp. 57-63]. Identifying and redressing the grievances of Telangana was a twofold challenge: countering crisis-ridden state cultures of neo-liberal populism and harnessing the global city region of Hyderabad towards more equitable development [Maringanti, 2010, Pp. 33-38]. The new state of Telangana was predicted to be created on capitalist terms. The declaration for the creation of a new state was made on the basis of electoral compulsions of the Congress party that had pledged to abandon the nominal socialist agenda, which characterized the earlier aspirations for a separate state [Maringanti, 2013]. The roots of a separate state of Telangana also go back to a long-standing demand for autonomy in social, economic and political matters [Melkote et al., 2010, Pp. 8-11]. Over the last decade, Telangana came to occupy the centre-stage in the state's politics with elections won and lost over this issue. At the heart of the problem lay the city of Hyderabad in the middle of Telangana but claimed by both states. The demand for a new state had in its background, complex issues and underlying causes- the historical differences between the regions, the economic and political empowerment that the people of Telangana aspire to, and the cultural disparities they had with people from Andhra and Rayalaseema [Nag, 2011]. One of the most contentious issues in the formation of Telangana had been the question of Hyderabad's revenues and how much of Andhra Pradesh's total they represent. Some reports claim that Hyderabad contributes a mind-boggling 74% of the state's total revenues. This has been central to the demand for a special status to Hyderabad and allowing a share of its revenues to the residual state [Pingle, 2013, Pp. 10-12].

The history of the Telangana movement may be seen as an unsuccessful exercise in integration of regions with different history, disparities in

economic development, elites with varying capacities and conflicting goals. The common language had not been able to unite the two regions even after several years [Pingle, 2009, Pp. 297-314]. The Srikrishna Committee's Analysis suggested that a separate Telangana can be a viable state and a larger majority of the people in the region favour statehood for the same [Rao, 2011, Pp. 33-36]. A majority of the tribals in Telangana lack basic necessities and live in pitiable conditions. In spite of a considerable increase in the fund allocation for tribal areas, most of the tribals were not able to draw the benefits due to the large-scale corruption among officials and the improper implementation of tribal development schemes. Besides, a majority of tribal areas lack proper communication and infrastructure facilities. The lives of tribals in a new state would definitely be better than what it was, as governance would improve in any small state [Reddy, 2014, Pp. 76-77]. The movement for a separate Telangana state was hailed by many intellectuals as a democratic struggle of the people of a region against political domination and economic exploitation. The central government's decision to create a new state was perceived as an official recognition of the people's aspiration for identity and self-rule. The construction of the Telangana identity can be attributed to partly fact, and partly half-truths, prejudices and false hopes. Apart from intellectuals, the resurrection of the regional identity has been facilitated by the opportunism of political parties, in particular the unjustifiable inaction of the left [Srikanth, 2013, Pp. 39-45]. The by-elections held in the 12 assembly constituencies indicated that the separate statehood demand had come to dominate the political discourse of the region. Social classes and groups seemed to have left older political affiliations and coalesced around candidates who stand unequivocally for separate statehood [Srinivasulu and Satyanarayana, 2010, Pp. 12-14]. Despite widespread support in Andhra Pradesh for the Telangana cause, there seemed to be an impasse over statehood for

the region due to the nexus between the state and the mafia-backed Seemandhra oligarchy. The Telangana movement offered the only incredible hope of changing the iniquitous structures of power and control in the state and its failure would have seen the forces of lawlessness acquiring new strength, with disastrous consequences for the common people [Vijay, 2012, Pp. 22-25].

EMERGING TRENDS TOWARDS SEPARATE STATEHOOD

VIDARBHA

The main reason for the demand for statehood for the eastern region of Vidarbha in Maharashtra is the economic and developmental neglect by Maharashtra which has left the region backward [Chitre and Tilak, 2009, Pp. 7]. In the present times, the focus of the agitation for a separate Vidarbha State has shifted from 'cultural identity' to 'development'. The feeling of relative deprivation among the people as well as leaders from Vidarbha has further intensified [Dhanagare, 2010]. Successive governments have failed to alleviate Vidarbha's economic underdevelopment, despite the provisions made by constitutional and other pronouncements. There are several political and economic compulsions guiding demands for a separate statehood [Kumar, 2001, Pp. 4614-4617]. The recent demand for statehood in Vidarbha in Maharashtra presents a striking contrast to the violent agitation in neighboring Andhra Pradesh for a separate Telangana state even though Vidarbha's claim is older and backed by a favorable recommendation by the States Reorganisation Commission in 1955 [Kumar, 2013, Pp. 71-76]. Agricultural development in Maharashtra over the last three decades has been unequal across regions with Western Maharashtra much ahead of the other regions in terms of major developmental indicators. It is primarily the deficit in irrigation development which lies behind the lack of agricultural development in Vidarbha and Marathwada. However, underlying this is also the question of absence of

adequate ultimate irrigation potential in these regions, particularly in the former [Chitre and Tilak, 2009, Pp. 15-33]. The inability of Marathwada and Vidarbha regions to compete effectively for a large share of the state's resources is mainly due to the absence of a well-articulated structure of groups and alliances in these regions [Mohanty, 2009, Pp. 63-69]. The agenda of developing Vidarbha within Maharashtra requires a time bound development plan for Vidarbha in the next few years which might remove the feeling of economic injustice done to Vidarbha [Pitale, 2009, Pp. 281-295]. Vidarbha's agrarian stagnation and the resultant stress on its farmers, which shows up in high suicide rates, has been explained in terms of legacy, a fragmented society, partisan politics, inadequate agrarian institutions, a development backlog and a harsh terrain. Many of these development depressants are hard to change quickly and the region's agriculture appears condemned to stagnation. The failure of all manner of 'special packages' designed to jump-start Vidarbha's agriculture has lent credence to this tragic narrative. However, the contrast between the agricultural growth trajectories of Saurashtra and Vidarbha raises new questions about this received wisdom. In the matter of "development depressants" Saurashtra was worse off than Vidarbha all along. However, since 1990, and especially after 2002, Saurashtra's agriculture has experienced unprecedented growth, unhindered by the development depressants. The contrast between Saurashtra and Vidarbha also challenges the conventional notion that stepping up public investment in agriculture is the only way of accelerating agricultural growth. Saurashtra's agricultural boom is driven not so much by public investment but by smart, farmer-friendly government policies that have stimulated private capital formation in agriculture. There are four specific developments which have contributed towards the agricultural progress of Saurashtra -the decentralised groundwater recharge movement, Jyotigram; a boom in Bt cotton and wheat, and a belated dairy

revolution. The state government played a key role in all these. The state government launched a major project, Saurashtra Narmada Avtaran Irrigation (SAUNI) four years ago which is expected to divert 1 million acre feet of surplus water from Sardar Sarovar dam across Narmada river in South Gujarat to Saurashtra through four link canals by 2019. It involves laying a 1,125-km network of pipelines at a cost of Rs 12,166 crore of which to carry Narmada water to these dams, and irrigate 4.13 lakh hectares (ha) land. Of this amount, Rs. 4221 crores have been already spent by 2016 and about 58-km phase I of Link I has already been commissioned this year. Underground pipeline canals have avoided the problems of land acquisition faced in other irrigation infrastructure development projects. Thus, the politically sensitive question of water availability is being effectively addressed in Saurashtra. Saurashtra which has substantial parts which are drought prone is thus being transformed into a booming groundwater irrigation economy, unlike Vidarbha. On the other hand, the lack of adequate irrigation development due to long delays in obtaining clearances from forests and environment departments, on top of a relatively low ultimate irrigation potential, has been the main problem in the development of Vidarbha region. In fact, in 2007-08, eight out of the 11 districts of Vidarbha had the irrigation potential created as percentage of net sown area lower than the state average. Indeed, in the four districts, Washim, Akola, Buldana and Amraoti of Vidarbha, this parameter is not only lower than the current state average, but is either lower than or is just above the state average of this parameter twenty-five years ago, that is, in 1982 [Chitre and Tilak, 2009, Pp. 21]. Vidarbha has been at the receiving end of doles, packages and a lot of lip service. But what will impart it dynamism is proactive, vigorous and farmer-friendly governance of its agricultural economy [Shah et al., 2014, Pp. 86-93].

COORG (KODAGU)

The Coorg or Kodagu district of Karnataka has been home to a docile yet striking movement for separate statehood. The demand of this district of Karnataka for separate statehood has been guided by a feeling of the distinct socio-cultural identity of the people of this region coupled with the perception that the development of this region has been neglected by the state government. According to the scholars, the origin of the Kodavas can be traced to a synthesis of peoples, originally settlers from the eastern Arabian Peninsula in the 5th century B.C. They took local women in marriage. Later Scythian Greeks in the army of Alexander the Great settled in the region after he abandoned his north-western Indian campaign in 327 B.C. There was intermarriage between the Greeks and the earlier inhabitants. This fusion produced a tall and fair people who were unique in south India. The region called Kodava formed an independent kingdom from the ninth century. The region began to prosper on account of the salt trade through the mountains from the Kerala coast to the great cities to the east. The State was administered by the Chief Commissioner of Mysore from 1881 until India's independence. From 1952 to 1956, Coorg formed a separate state, a "Part C" state under the Indian Constitution. The Linguistic reorganisation of states in 1956 united Coorg with the new Kannada language state of Mysore, later renamed Karnataka. The majority Kannadigas of Karnataka relegated Kodagu to the status of a remote backwater, neglected by the state ministries and useful only for the coffee and oranges it exported and the revenues from their sale and exports. The neglect continued during the 1960s and 1970s, sparking a national movement beginning in the late 1970s. National Sentiment was paralleled by a reculturation, a new appreciation for the Kodavas' unique history, language and culture. The loss of local control since 1956 has seriously threatened the language and culture of the region. The decline of the distinctive culture is seen as a

manner of conquest. The Kodavas argue that their nation has been conquered and that is the basis of the modern nationalist movement. The Kodava nationalists favour small states as an antidote to the unwieldy and cumbersome linguistic state of Karnataka [Minachan, 2002]. The natives of Coorg known as Kodavas speak the Kodagu language which is a Dravidian language. The Kodava National Council (CNC) has demanded the inclusion of the Kodava language in the eighth schedule of the Constitution. Although the movement for a separate state of Coorg appears to be gathering momentum, it draws support from a narrow social base- ethnic Coorgis, large landowners and the planters. This accounts for its limited agenda which may in the long run simply provide space for other conflicts -caste, communal, ethnic, or fascist- to emerge in Coorg [Assadi, 1997, Pp. 3114-3116]. The need of the hour is to characterise the energies and resources for the development of the district and strong political will on the part of both the state and central governments [Somaiah, 2007, Pp. 377-395].

NORTH-EAST

The creation of the seven north-eastern states does not seem to have completely solved the problems of this largely hilly region of the country. The roots of separatism in North East region lie within and without. The roots within the country have to be traced to the actions of the state, both colonial and post-colonial, affecting the tribal way of life in North East India. In other words, what is necessary is to carefully examine the approaches of the state to the problems of the region [Datta, 1992, Pp. 536-58]. The right to self-determination of the Nagas cannot be said to be absolute, it cannot be granted at the cost of territorial integrity, political stability and state sovereignty [Kaur, 2006]. Even after the creation of seven states to satisfy the ethnic aspirations of the local people, the north-east continues to be in

turmoil. Further Balkanization is being demanded which will lead to the creation of very small and totally unviable states. The existing states have failed to meet the basic needs of the people [Madhab, 1999, Pp. 320-322]. The machinery devised for the coordination of the activities of the units in North-East India is inadequate and ineffective. The situation in North East India is complex. North East India occupies a strategic position as it has common frontier with four political communities, China in the North, Bhutan in the West, Bangladesh in the east and Burma in the South. The geopolitical position, the racial and linguistic diversity and the individualistic character of the people were some of the factors responsible for the constant reorganisation of the area since 1874. Some political scientists may, therefore, question the adequacy of the institutions brought into existence to solve the problems. The institutions which were proposed to be established in the North East to serve more than one state include the Civil Service, the Public Service Commission, the High Court and the Electricity Board and Warehousing Corporation [Rao, 1972, Pp. 123-144].

THE CASE OF DARJEELING

The complexities of the ethnic problems were embedded in the demands and the resultant movements for autonomy which came to surface from time to time in the district of Darjeeling in West Bengal. By the end of the 19th century, there was a tremendous increase in the population of the district of Darjeeling. This was mainly due to the improvement in medical facilities, communication and opening of the tea gardens. The Gorkhas comprised 85% of the total population and Darjeeling came to occupy the centerstage of the Gorkhas in India. Darjeeling also rapidly developed as the centre of literary, artistic, political and cultural development as renowned

Gorkha minds began to emerge and gather in Darjeeling Hills [Roy, 2014]. The problem of ethnic identity of the Nepalis of Darjeeling takes the question of statehood of Darjeeling beyond the general problem of uneven development of different geo-linguistic and cultural identities in our country. The positive alternative is to approach the same problem on the premises of national integration based on the twin processes of class struggle and democratic decentralisation of power [Dasgupta, 1999, Pp. 47-68]. The demand by the Gorkhaland Mukti Morcha to create a new Gorkhaland State including the plains areas such as Siliguri has the potential of leading to an ethnic confrontation between various communities in the region [Kumar and Bhattacharjee, 2008, Pp 15-16]. Recently, there were massive demonstrations by the Gorkha Janmukti Morcha (GJM) in Darjeeling. The reason for the outburst was the Chief Minister's decision to compulsorily impose Bengali in all schools in the state. The Chief Minister went on to clarify that the Nepali-speaking hill region would be outside the purview of this decision. However, by then the linguistic issue had converted into a renewal of the claim for separate statehood for this region.

REGIONAL INEQUALITY: A CAUSE FOR SEPARATE STATEHOOD MOVEMENTS

Regional inequality appears to be a subtle factor guiding some of the separate statehood movements in India. Despite the efforts of the Finance Commission and the Planning Commission to remove regional inequality, regional disparity has continued. Besides, disparities in development at the All-India level, disparities also exist within each state. This inequality has led to sub-regional movements for separate states within the Indian Union, or greater autonomy for the sub-regions within the existing states. It is

because of these regional feelings that Uttarakhand, Jharkhand and Chhattisgarh were created out of Uttar Pradesh, Bihar and Madhya Pradesh, though the tribal and linguistic factors were also important [Chandra, Mukherjee and Mukherjee, 2008]. The major areas of conflict between those who press for central authority and those insisting on smaller states are - educational policy, allocation of resources, planning, language policy, electoral competition and mass media control [Dhal, 2004, Pp. 209-211]. The Khalistan movement which sought a separate state for Sikhs was a result of multitude of social, economic and political factors that led to a growing sense of alienation among Sikhs in India. The failure of the state to address the political and economic problems of the Sikhs facilitated the rise of militancy and the movement for a separate state widening the chasm between the Sikhs and the Indian State for about a decade before Punjab limped to normalcy in 1992 [Jetly, 2008, Pp. 61-75]. In a country where capitalism is slowly reaching new areas and awakening new cultural groups to life, the stream of sub-national uprisings seems to be unending. New demands and aspirations continue to surface, some of which are demanding complete independence, not just self-rule. The Indian nationality question cannot be studied in exclusion of these aspects because the culmination of this process can alone prove whether India has been a nation- in- the -making or a nation-in-the-unmaking [Nag, 1993, Pp. 1521-1532]. The demand for state reorganisation and creation of new states has to be viewed basically as an issue arising out of a sense of regional injustice. However, a full-fledged theory of regional justice is yet to emerge in the literature. Most of the initiatives for conceptualisation of issues of justice focus on 'individual' justice rather than issues of 'regional' injustice. Creation of new states may not necessarily serve as a permanent solution to the problem of regional

injustice [Panchmukhi, P.R. 2009, Pp. 200-238]. Creation of one or two separate states by itself cannot solve the problem of regional imbalance and neglect, unless persistent effort is made in that direction. Proper decentralisation of power and resources to the Zilla Parishads and lower levels alone can atone for this. [Rath, 2009, Pp. 193-197]. The Indian State is a divided Leviathan: its developmental failure is the combined product of central-local interactions and political choices by regional elites [Sinha, 2005].

FEDERALISM: A CAUSE FOR IMBALANCED REGIONAL DEVELOPMENT

The federal structure of the Indian polity also appears to be a possible reason for imbalanced regional development which, in turn, has led to the demands for smaller states from such regions which feel that they have been sidelined from the overall process of development. T.J. Barrington, has classified problems of regional development into under-development/ non-development and over development. He suggests the co-ordination of national plan implementation on a regional basis and also the creation of regional governments. This, it appears, would help solve the problem of imbalances in regional development. Federalism offers institutional resources to help the states achieve what they want to accomplish. However, what they want to accomplish is to only a relatively limited extent shaped by the institution of federalism. Federalism is unlikely to hold an unjust regime together, but equally it is unlikely to pull a regime apart [Cameron, 2010]. There appears to be a centralist bias in federal relations. Although the Constitution provides equal distribution between the centre and states, in practice however the centre is very much the active agent in the so-called federal entity. In order to solve this problem, an alternate frame is necessary which includes redistribution of financial and monetary powers, reorientation of

the Planning Commission, the Centre becoming the co-coordinator but not the arbiter and putting the onus on the states [Mitra, 1987]. The best course for the reorganisation of states would be to approach each case on its merits. Any attempt at once-for-all reorganisation of states all over the country on the basis of a fixed set of criteria is likely to be artificial and arbitrary and therefore unstable. [Rao, 2005]. The planning process has not benefitted all the regions of the country to an equal extent. Consequently, significant differences persist in the levels of living and development among different regions and sub-regions of the country. The problem of regional imbalances can be dealt with successfully only when the present piece-meal and *ad-hoc* approach is replaced by comprehensive regional planning [Singh, 1981]. Yogendra Yadav suggests de-scaling of the Indian Union not merely by creating small states but also by two other instrumentalities which include creating district level governments and secondly greater functionaries, finances and functions to local bodies.²

STATEHOOD MOVEMENTS IN INDIA: IMPLICATIONS

There is a magnitude of difference between statehood movements of the past and the ongoing statehood movements. Language is no longer the guiding criterion. In fact, the very first state in India (Andhra Pradesh) which was created on the basis of a separate language (Telugu) has been split into two states now. This is testimony to the fact that language has failed to unite the people of the two regions-Andhra and Telangana. None of the new states formed in 2000 was on the grounds of a distinct language-based culture - the principle that guided the establishment of states during the formative phases of the Indian Union in the 1950s and 1960s [Bose, 2013, Pp. 90-92]. The cultural distinctiveness and social disparities that nourish regionalism in India continue to be found within a number of states. With heightened

political consciousness and increased competition, demands for the creation of new states or for autonomous regions within the states remain a catalyst for social unrest. Separate statehood movements, varying greatly in support and intensity, exist throughout India and frequently involve depressed regions such as the tribal areas in Central and Eastern India, the eastern districts of Uttar Pradesh, the Saurashtra region of Gujarat, the Vidarbha region of Maharashtra and the Telangana region of Andhra.

Besides the demand for a separate state of Uttarakhand, Uttar Pradesh has also witnessed other movements for separate statehood, such as Poorvanchal, Harit Pradesh and Bundelkhand. The debate of small state as a model of development resurfaced in the wake of regional identity versus development debate. There is a relationship between separate statehood and regional aspiration. The demand for separate state for the sake of development and administrative efficiency does not mean a support for separatism. It is not outside the realm of Indian federal structure or constitutional framework. Rather, in another way, it may strengthen the national unity through the process of equitable growth and may provide answers to so many violent critical questions like naxalism [Pandey, 2008, Pp. 341-354]. The demand for Harit Pradesh is intertwined with the politics of region and caste in U.P and is also spearheaded by a section of the Jats of Western U.P [Singh, 2001, Pp. 2961-2967]. Farmers' suicides in Bundelkhand are a result of several years of neglect of the agricultural sector and industrial backwardness. The demand for a separate state only seeks to satisfy political ends and is no solution to the multiple problems of Bundelkhand's farmers [Verma, A.K. 2011, Pp. 10-11].

Of a somewhat different character is the demand by some in Haryana for adjacent districts of Rajasthan and Uttar Pradesh, in order to create Vishal (greater) Haryana [Hardgrave and Kochanek, 2007]. This movement for the creation of Vishal Haryana was first launched in 1958, on the basis that it was an independent linguistic and cultural unit of the country having legitimate claims of its own [Dahiya, 2008]. Devising any framework to address the issue of federal reorganisation requires the constitution of a permanent State Reorganisation Commission, Amendment of the Constitution to ensure that the demand for a new states emanates from the state legislature and not at the centre, examination of economic and social viability rather than political considerations and clear-cut safeguards to encourage democratic concerns like development and governance rather than religion, caste and language as valid grounds for a new state [Kumar, 2010, Pp. 15-18]. The twin issues of identity and development are two important bases for the demand for smaller states since the early 20th century and are often signifiers of the unraveling politics in the federal polity. Regions within the states are not merely politico-administrative instituted constructs but are also imagined or constituted among others in historical, geographic, economic, sociological or cultural terms [Kumar, 2011]. While the creation of new states will not automatically spur development of the particular region, it makes possible a better articulation of regional political and social aspirations and brings the structures of government and administration closer to hitherto neglected areas [Kumar, 2002]. The need of the hour is to concentrate more on development of the states already existing. It is immaterial whether the state is small or big; what is required is a strong political will to govern with full concern for regional balance and regional justice. Development requires a conducive atmosphere to be created by both leaders and citizens [Sharma, 2003, Pp.

3973-3975]. The creation of new states has generally been seen as an accident of political timing. Local leaders, arguing for or against separate states are often seen as acting without intent and merely playing politics [Tillin, 2011, Pp. 34-38].

FURTHER REORGANISATION OF STATES IN INDIA

There are many who opine that setting up a second states reorganisation commission is essential to tackle the problem of further reorganisation of states in India. India will have to live with its linguistic problem and its sub-identities for some years to come. Reorganisation was administratively necessary because the then existing structure was in no way a legitimate one, being an outcome of history of accession of different regions to the British empire, the requirements of administration as viewed by the British, and the process of integration of the Princely states with India subsequent to Independence. It was also imperative to redraw the states' boundaries because for years, the linguistic states idea had been emphasised as one that would become a reality with freedom. Any definite plan of reorganisation, must be carried out with swiftness and decisiveness because as the Commission's Report points out "further deferment of a general reorganisation will cause dissatisfaction and disappointment" [Arora, 1956, Pp. 27-30]. Lessons need to be taken from the functioning of the smaller states before deciding on the further reorganisation of the country. Ad-hocism in this matter is going to be counter-productive. The backward regions of the backward states have suffered for decades. Their development cannot wait [Kumar, 2011]. The Indian ruling elite is no longer treating states' reorganisation as the emergence of parochial identities. Different regions established their identity on the basis of language, culture, administrative coherence, economic development, or lack of it. Gradually, it has been recognised that the reorganisation of states leads to good governance if such reorganisation stems

from administrative convenience, economic viability, similarity in developmental needs of a sub-region, and cultural-linguistic affinity [Majeed, 2003, Pp. 83-89]. According to V. Venkata Rao, experience has conclusively proved the fact that the states based on language have become intolerant, aggressive and expansionist in character. He suggests that the reorganisation of states in India should be undertaken bearing in mind factors such as the unity of the country, adequacy of the state's financial resources, administrative convenience, legitimate wishes of the people and sufficiency of size of the state. Language alone should not be the basis of reorganisation³ [Rao, 1994]. Any further reorganisation of states should be based on a cosmopolitan model of democracy⁴ and should be anchored in the theories of constitutionalism, consociationalism⁵ and multiculturalism. [Singh, Pp. 70-75]. Language exclusively should not be the basis for reorganisation of states firstly because of intra-regional economic or developmental imbalances. Many regions within the linguistic regions of the country have remained backward. This backwardness could be attributed to the dominant role in terms of political power, played by the affluent regions within the region. The second reason why language should not be considered the sole basis for states' reorganisation is because of the possible presence of linguistic minorities within the regions. Many sub-regions within the regions have people speaking a language which is different from the language spoken by the majority. Their representation in public space remains doubtful if the linguistic majority of the region does not wish to concede it. The essence of theories such as Consociationalism as theorised by Arend Lijphart and Multiculturalism as discussed by Will Kymlicka is to extend cultural, economic and political space to minorities. Such extension would not only empower minorities but would also enhance the quality of democracy. Any further demand for separate statehood should

essentially take into account the factors of economic backwardness and presence of cultural variations each specific case.

The reorganisation of states or creation of smaller states cannot be regarded as a sure cure of the ills of our political system. However, new states will have to be allowed gradually. Demand for the creation of a new state will have to be examined by way of what such region is being deprived of by being the part of a big state and what possible benefits will accrue to the people if separate state is created for them [Talukdar, 1996, Pp 39-45]. The existing explanations for territorial reorganisation in India draw respectively on factors relating to sociology, federal electoral politics, political economy and administrative efficiency. Strikingly, some of the most active 'movements' for statehood in recent years have been seen in 'linguistic states': the movement for Telangana in Andhra Pradesh and that for Gorkhaland in West Bengal. The fate of these demands rests on the intersection of conditions at the sub-state, state and federal levels. Those who argue that new or smaller states are good for economic development have focused on the increasing rates of economic growth seen in the new states, particularly in Chhattisgarh and Uttarakhand, as well as post-bifurcation Bihar since their formation. Yet, beyond headline growth figures, the reorganisation experience of all the three new states raises questions about the structures and spatial geography of economic growth since liberalisation and its resulting exclusions [Tillin, 2013, Pp. 10-11]. Chitre and Tilak argue, "One needs to look at the fiscal implications of the reorganisation of states for two reasons. Firstly, creation of a new state entails alterations in the fiscal position of the mother state. Secondly, an analysis of the receipts and expenditure pattern of the newly created State provides pointers on the issues pertaining to the efficacy of fiscal management which is of vital importance from the point of view of a new state

in its infancy." They point out that the composition of the revenue receipts of Chhattisgarh, Jharkhand and Uttarakhand point to their financial dependence on the central government [Chitre and Tilak, 2009, P. 59].

The demand for smaller states in India is a striking reality which cannot be ignored. With the demand for Telangana being met, it is only a matter of time when similar movements for smaller states which are dormant at the moment, will begin to become vociferous. However, creation of small states is no sure guarantee that the developmental problems of a region would be solved. Size of the state may be a crucial factor, but not the only factor in determining progress and development of a particular region. Besides the proper utilisation of funds allocated for various schemes and programmes, it is also indispensable to have a strong political will and transparency in administration in order to ensure that a newly created state makes progress on all fronts.

NOTES

1. Ekka and Sinha. 2004, Documentation of *Jharkhand Movement*.

2. See Yadav, Yogendra, *Journal of the Indian School of Political Economy*, 2009, p. 321, and 2011, p. 21; also see Ambedkar, Prakash, 2009.

3. Rao, V. Venkata, 1994; The Political Map of India in Grover, Verinder and Ranjana Arora's eds., *Federation of India and States' Reorganisation*.

4. 'The cosmopolitan model of democracy', which was proposed by thinkers such as Danieli Archibugi and David Held refers to a global state linked to an expanding network of democratic states and agencies [Hoskyns, 2014, Pp. 45]

5. "a stable democratic system in deeply divided societies that is based on power sharing between elites from different social groups... The two central characteristics of consociationalism are government by grand coalition and segmental autonomy... Lijphart distinguished in the 1960s four characteristics that should be present in order to qualify for the label of consociationalism. First there must be a government by coalition, as well as a second element of segmental autonomy, such as federal arrangements that allow for autonomy in policy fields, (i.e., education policy for which

responsibility lays with the German *Länder*, or states). Third, proportionality must prevail in the electoral system but also with regard to civil service appointments and the allocation of public funds. Finally, consociationalism also foresees a minority veto for the protection of vital minority interests". See <https://www.britannica.com/topic/consociationalism>.

REFERENCES

- Ambedkar, Prakash, 2009, "On Small States", *Journal of Indian School of Political Economy*, Vol. XXI.
- Assadi, Muzaffar, 1997; 'Separatist Movement in Coorg', *Economic and Political Weekly*, Vol. XXXII, No. 49, Dec 6-12.
- Arora, Satish Kumar, 1956; The Reorganisation of the Indian States, *Far Eastern Survey*. Vol. 25, No. 2, Feb
- Barrington, T.J., 1976; *From Big Government to local Government, The road to Decentralisation*, Institute of Public Administration, Dublin.
- Bhatt, S C & Gopal K Bhargava, 2005; *Land and People of Indian States and Union Territories*, Kalpaz Publications, Delhi.
- Bose, Sumantra, 2013; *Transforming India. Challenges to the World's Largest Democracy*, USA.
- Cameron, David, 2010; The Paradox of Federalism, *Some Practical Reflections*, Routledge, Great Britain.
- Chandra, Bipan, Mridula Mukherjee and Aditya Mukherjee, 2008; *India since Independence*, Penguin Books, Delhi.
- Chitre, Vikas and Abhay Tilak, 2009; 'Is there a case for Re-organisation of states?', *Journal of Indian School of Political Economy*, Vol. XXI, Nos. 1-4, January-December.
- Dahiya, S. Bhim, 2008; *Power Politics in Haryana: A View from the Bridge*, Gyan Publishing House, New Delhi.
- Dasgupta, Atis, 1999; 'Ethnic Problems and Movements for Autonomy in Darjeeling', *Social Scientist*, Vol. 27, November-December.
- Datta, Prabhat, 1992; 'Secessionist Movements in North East India', *The Indian Journal of Political Science*, Vol. 53, No. 4, October-December.
- Dhal, Padma Charan, 2004; *Indian Polity. Structure and Process*, Aavishkar Publishers. Jaipur.
- Ekka, William and R.K. Sinha, 2004; *Documentation of Jharkhand Movement*, Anthropological Survey of India, Kolkata.
- Forrester, Duncan, B., 1970; 'Subregionalism in India. The Case of Telangana', *Pacific Affairs*, Vol. 43, No. 1, Spring.
- Ghosh, Arunabha, 1998; *Jharkhand Movement, A Study in the Politics of Regionalism*, Minerva Associates Pvt, Ltd, Calcutta.
- Gudavarthy, Ajay, 2013; Telangana Nation, State and the City, *Economic and Political Weekly*, February 2-8, Vol. XLVIII No. 5.
- Haragopal, G., 2010; 'The Telangana People's Movement: The Unfolding Political Culture', *Economic and Political Weekly*, Vol. XLV, No. 42, October 16-22
- Hardgrave, Robert L Jr and Stanley A. Kochanek, 2007; *Government and Politics in a Developing Nation*, Wadsworth Publishing Company, India.
- Hohler, Lorraine, 2013; 'A Telangana State? An Illustrative Analysis of the Stakes in Modifying Internal Borders', Vol. XLVIII, No. 34, August 24-30.
- Jayal, Niraja Gopal, 2000; 'Uttaranchal, Same Wine, Same Bottle, New Label', *Economic and Political Weekly*, Vol. 35, No. 49, December 2-8.
- Jetly, Rajshree, 2008; 'The Khalistan Movement in India: The Interplay of Politics and State Power', *International Review of Modern Sociology*, Vol. 34, No. 1, Spring.
- Joshi, P.C., 1999; 'Looking beyond Statehood. Uttarakhand: Search for a New Agenda', *Economic and Political Weekly*, December 11-17.
- Kaur, Kulwinder, 2006; 'Naga tangle, Is there a way out?' in Karna, M.N. eds., *Democracy, Pluralism and Conflict*, Rawat Publications, New Delhi.
- Keiko, Yamada., 2010; Origin and Historical Evolution of the Identity of Modern Telugus, *Economic and Political Weekly*, Vol. 45, No. 34, August 21-27.
- Kohr, Leopold, 1986; *The Breakdown of Nations*, Routledge and Kegan Paul, London New York.
- Kumar, Ajit, 2001; 'Maharashtra, Statehood for Vidarbha', *Economic and Political Weekly*, Vol. 36, No. 50, December 15-21.
- Kumar, Ajit, 2013; 'Article 371 (2) and the Receding Demand for Vidarbha State', *Economic and Political Weekly*, Vol. XLVIII, No. 4, January 26- Feb 1.
- Kumar, Anant, 2014; The Politics behind Jharkhand's Domicile Policy, *Economic and Political Weekly*, Vol. XLIV, No. 17, April 26-May 2.
- Kumar, Ashutosh, 2010; Exploring the demand for new states, *Economic and Political Weekly*, Vol. XLV, No. 33, August 14-20.
- Kumar, Ashutosh, 2011; *Rethinking State Politics in India: Regions within Regions*, Routledge. India.
- Kumar, Pradeep, 1998; 'Demand for Separate Statehood for Uttar Pradesh Hills: Politics of Uttarakhand Agitation in India' in Singh, Gopal's, eds., *Democracy, Discontent and Societal Conflicts*, Anamika Publishers.
- Kumar, Rakesh and Dhruvajyoti Bhattacharjee, 2008; 'Sili-guri in Gorkhaland: A Political Nightmare for West Bengal?', *Economic and Political Weekly*, Vol. 43, No. 25, June 21-26.
- Kumar, Sanjay, 2002; 'Creation of New States. Rationale and Implications', *Economic and Political Weekly*, September 7-13.
- Madhab, Jayanta, 1999; 'North-East: Crisis of Identity, Security and Underdevelopment', *Economic and Political Weekly*, February 6-12.
- Maheshwari, Shriram, 1979; *State Governments in India, The Macmillan Company of India*, Limited. Meerut.
- Majeed, Akhtar, 2003; 'The Changing Politics of States' Reorganisation', *Publius*, Vol. 33, No. 4, Autumn.

- Maringanti, Anant, 2010; *Telangana: 'Righting Historical Wrongs or Getting the Future Right'*, *Economic and Political Weekly*, Vol. XLV, No. 4, January 23-29.
- Maringanti, Anant, 2013; 'The Telangana Tangle begins to unravel', *Economic and Political Weekly*, Vol. XLXIII, No. 32, August 10-16.
- Mawdsley, Emma, 1999; 'A New Himalayan State in India: Popular perceptions of Regionalism, Politics and Development', *Mountain Research and Development*, Vol. 19, No. 2, May.
- Melkote, S. Rama, Revathi E., Lalitha K., Sajaya K., Suneetha A., 2010; 'The Movement for Telangana: Myth or Reality', *Economic and Political Weekly*, Vol. XLV, No. 2, January 9-15.
- Minahan, James, 2002; *Encyclopedia of the Stateless Nations, Ethnic and National Groups around the World*, Greenwood Press. London.
- Mitra, Ashok, 1987; *Will Growth and Centralised Fiscal Arrangements do? Centre-State Budgetary Transfers*, Oxford University Press.
- Mohanty, B.B., 2009; 'Regional Disparity in Agricultural Development of Maharashtra', *Economic and Political Weekly*, Vol. 44, No. 6, February 7-13.
- Nag, Kingshuk, 2011; *Battleground Telangana. Chronicle of an Agitation*, Harper Collins Publishers, Noida.
- Nag, Sajal, 1993; 'Multiplication of Nations? Political Economy of Sub Nationalism in India', *Economic and Political Weekly*, Vol. 28, No. 29/30, July 17-24.
- Nautiyal, Annpurna, 1996; *Separate Uttarakhand State. Political Issue or Economic Necessity in Nautiyal, R.R and Nautiyal, Annpurna's eds., Uttarakhand in Turmoil*, M.D. Publications Private Limited. New Delhi.
- Panchmukhi, P.R., 2009; 'Regional Justice Perspectives and The Issue of States Reorganisation in India: A Revisit', *Journal of Indian School of Political Economy*, Vol. 21, Nos. 1-4, Jan-Dec.
- Pandey, Deepak, Kumar, 2008; 'Critical Evaluation of Demand for Poorvanchal State', *The Indian Journal of Political Science*, Vol. LXIX, No. 2, April-June.
- Pai, Sudha, 2013; New patterns of mobilization in the 1990s and beyond in Kohli, Atul and Prerna S Singh's eds., *Routledge Handbook of Indian Politics*, Routledge. Oxon.
- Phanjouba, Pradip, 2011; 'Manipur's Theatre of the Absurd', *Economic and Political Weekly*, October 22-28.
- Pingle, Gautam, 2013; Hyderabad's Revenues Statistics or Damn Lies? *Economic and Political Weekly*, Vol. XLVIII, No. 48, November 30-Dec 6.
- Pingle, Gautam., 2009; 'The Telangana Tragedy- A lesson in Integration and Disintegration', *Journal of Indian School of Political Economy*, Vol 21. Nos. 1-4, Jan-Dec.
- Pingle, Gautam, 2013; 'Untangling Telangana', *Economic and Political Weekly*, Vol. XLVIII, No. 44, November 2-8.
- Pitale, R.L., 2009; Why Vidarbha State? Failure of Article 371 (2) of the Constitution: Vidarbha State is the only alternative, *Journal of Indian School of Political Economy*, Vol. 21, Nos. 1-4, Jan-Dec.
- Prakash, Amit, 2001; *Jharkhand: Politics of Development and Identity*, Orient Longman Limited. New Delhi.
- Raj, A.L., 1992; 'Ideology and Hegemony in Jharkhand Movement', *Economic and Political Weekly*, February 1-7.
- Kodanda, Ram M., 2007; 'Movement for Telangana State. A Struggle for Autonomy', *Economic and Political Weekly*, Vol. 42, No. 2, January 13-19.
- Ramdas, R., 2013; 'A Separate Telangana, Promises and Prospects for Tribal People', *Economic and Political Weekly*, Vol. XLVIII, No. 29, July 20-26.
- Rao, Gangadhara G., 2013; 'Vol Hyderabad and the bifurcation of Andhra Pradesh', *Economic and Political Weekly*, Vol. XLVIII, No. 42, October 19-25.
- Rao, C.H. Hanumantha, 2005; *Essays on Development Strategy, Regional Disparities and Centre-State Financial Relations in India*, Academic Foundation, New Delhi.
- Rao, C.H. Hanumantha, 2011; 'Recommendations at Variance with the Analysis', *Economic and Political Weekly*, Vol. XLVI, No. 5, January 29- Feb 4.
- Rao, V, Venkata, 1972; 'Reorganisation of North East India', *The Indian Journal of Political Science*, Vol. 33, No. 2, April-June.
- Rao, V. Venkata, 1994; The Political Map of India in Grover, Verinder and Ranjana Arora's eds., *Federation of India and States' Reorganisation*, Deep and Deep Publications, New Delhi.
- Rath, Nilakantha, 2009; 'Separation is no solution to the problem of Regional Imbalance in Development', *Journal of Indian School of Political Economy*, Vol. 21, Nos. 1-4, Jan-Dec.
- Reddy, Gaddam, B.A. Ram and V. Sharma, 1979; *Regionalism in India: A Study of Telangana*, Concept Publishing Company, New Delhi.
- Reddy, T. Prabhakara, 2014; 'The Future of Tribals in Telangana State', *Economic and Political Weekly*, Vol. XLIX, No. 4, January 25-February 1.
- Roy, Barun, 2014; *Gorkhas and Gorkhaland*, Parabati Roy Foundation, Darjeeling.
- Sarangi, Asha and Sudha Pai, 2011; *Interrogating Reorganisation of States: Culture, Identity and Politics in India*, Routledge.
- Shah, Tushaar, Yashree Mehta, Vivek Kher and Alka Palrecha, 2014; 'Generating Agrarian Dynamism. Saurashtra's Lessons for Vidarbha', *Economic and Political Weekly*, Vol. XLIX, Nos. 26&27, June 28-July 5.
- Sharma, Siddharth, 2003; 'Creation of New States, Need for Constitutional Parameters', *Economic and Political Weekly*, Vol. 38, No. 38, September 20-26.
- Singh, Jagpal, 2001; 'Politics of Harit Pradesh, The Case of Western UP as a separate State', *Economic and Political Weekly*, Vol. 36, No. 31, August 4-10.
- Singh, Ajit Kumar, 1981; *Patterns of Regional Development: A Comparative Study*, Sterling Publishers Private Limited, New Delhi.
- Singh, Mahendra Prasad, 'Reorganisation of States in India', *Economic and Political Weekly*, Vol. XLIII, No. 11.

- Sinha, Aseema, 2005; *The Regional Roots of Developmental Politics in India: A Divided Leviathan*, Indiana, University Press.
- Somaiah, P.E., 2007; Movement for Statehood in Kodagu in Ramaswamy, Harish's eds., *Karnataka Government and Politics*, Concept Publishing Company, New Delhi.
- Srikanth, H., 2013; 'Construction and Consolidation of the Telangana identity', *Economic and Political Weekly*, Vol. XLVIII, Nos. 45 and 46, November 16-22.
- Srinivasulu K and D Satyanarayana, 2010; 'By- elections and Telangana Agitation', *Economic and Political Weekly*, Vol. 45, No. 33, August 14-20.
- Talukdar, A.C., 1996; The Issues of State Reorganisation: Some Reflections, in Ray B. Datta and S.P. Agrawal (eds.), *Reorganisation of North East India since 1947*, Concept Publishing Company, New Delhi.
- Tillin, Louise, 2011; 'Statehood and the Politics of Intent', *Economic and Political Weekly*, Vol. XLVI, No. 20, May 14-20.
- Tillin, Louise, 2013; *Remapping India: New States and Their Political Origins*, Hurst C and Co. Publishers Ltd, London.
- Verma, A.K., 2011; 'Farmers' Suicides and Statehood demand in Bundelkhand', *Economic and Political Weekly*, Vol. XLVI, No. 28, July 9-15.
- Vijay, G., 2012; 'Telangana Movement. Democratisation or Authoritarianism', *Economic and Political Weekly*, Vol XLVII, No. 37, September 15-21.
- Yadav, Hanumant, 2010; Inter- District Disparity in Chhattisgarh in Thakur, Anil Kumar and Shyam Sunder Singh Chauhan eds., *Inter- Regional Disparities in India*, Deep and Deep Publications Private Limited, New Delhi.
- Yadav, Yogendra, 2009; 'On Thinking about Scale of Representative Government in India', *Journal of Indian School of Political Economy*, Vol. XXI, Nos 1-4.

STREET LABOURERS IN MILLION-PLUS POPULATED CITIES IN UTTAR PRADESH NATURE, CAUSES AND IMPLICATIONS

Bhaskar Majumder & V. Narayan

A common sight in many large Indian cities each morning is labourers waiting for work on public road crossings. Mostly migrants from rural areas, these street labourers are hired by employers for engagement at the bottom of the labour market. These labourers are supposedly free to offer their labour to any buyer at perceived labour-equivalent wage rate and working conditions but the adverse initial conditions at their outmigration zone incapacitates them from bargaining. This paper examines the nature, causes and implications of migration of the street labourers in all the six million-plus populated cities of Uttar Pradesh. The recommendations follow.

Early morning each day in any million-plus populated city in India, an assembly of mostly male persons can be observed on the sides of the crossing of roads, ready to offer their labour power. Supply of labour finds its market in the urban economy through a brief negotiation between the labourers and the employers. No vacuum is created following absorption of some labourers since others stay behind as residue and the next day some more labourers join the assembly. The production relation between the employer and the labourers does not get prolonged and often the relation does not go beyond the working hours of a day. The labourers are not tied to any particular employer. Each one is free to untie the work relation. The engagement is oral and there is no legal/written contract. The works done by the labourers include earthworks, head load works, masonry in construction works, or any manual work that the employers offer and the worker agrees to execute. This tenure of job depends on the quantum of work and the ability-cum-willingness of the labourer to work in exchange for wages. The tenure of job thus varies from very short-term like a day, to medium-term like a few months. The location of the worksite is limited to the city itself or to the urban fringes.

The crossing of roads where the labourers wait for job is called labour chauraha in Uttar Pradesh.

Labour *chaurahas* are not worksites; they are crossings of three to four roads, which are assembly points for the job-seeking labourers. These labour chaurahas generally get formed adjacent to bus depots, railway stations, and markets as the labourers come by train/bus to the city depending on distance and travel cost, which they bear on their own. All of them move out from their villages since they remain jobless in their native places for long periods of time. Since they assemble on street crossings they can also be called street labourers, not in the sense that they have no residential address, but in the sense that public roads and streets become their living spaces by compulsion in absence of better alternatives to wait and to search for jobs in the cities. The city administration does not obstruct them from occupying space on the public road since it is for short period of the day, generally from 6:00 a.m. to 10:00 a.m. These labourers generally are not accompanied by their family members so the carrying capacity of the city is not burdened much and the city administration can afford to maintain silence on this issue. The labourers are not paid any advance wage when they are offered employment, implying the freedom of both the labourers and the employers. This simultaneously implies apparent freedom of these street labourers to offer labour power to faceless buyers. They do not have any long-term employment guarantee or

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attachment with any particular employer and they remain in circulation over several employers and cities.

The city where the labourers assemble has to be large by size of population, infrastructure, trade and business, and industries. The workers usually migrate from poverty-belt areas to search for jobs. Most of the labourers come from landless households and they usually come during off-agricultural seasons each year in the absence of scope to work as agricultural labourers or as tenants in their native villages. Agriculture remains underdeveloped in most parts of India due to seasonal cultivation; hence, the landless wage-labourers and marginal farmers migrate to other places during off-agriculture seasons [Oberai and Singh, 1983, P. 30; Sahu and Das, 2010, P. 103; Korra, 2011, P. 68]. Inter-state migration shows mostly migration from poorer region to less poor region [NCEUS, 2008, P. 96]. Most of the migrant labourers belong to castes at the bottom of the Hindu social hierarchy (SCs and OBCs) but people from high castes may also migrate to cities to get engaged in manual jobs since the socio-cultural scenario in Indian rural areas do not allow people from high caste households to get engaged in manual-menial works there [Majumder, 2004, P. 625]. These migrant households earn income below subsistence level at the root and so they are forced to migrate elsewhere for survival. Being mostly illiterate and poor, they remain as manual labourers at the bottom of the labour market in the unorganized sector of the economy. The rural to urban migration is not determined by the actual or expected wage-differential because there is no wage rate in rural areas in absence of any job opportunities during off-agricultural season. The non-farm rural activities and restricted access to shrinking common resources cannot retain them for long in the rural areas; hence, they migrate to cities for any job at any wage rate for survival.

The population of cities accelerates due to rural-urban migration and natural increase of population [UN-HABITAT, 2003]. Urbanization shows increasing carrying capacity of the city to attract population from outside through expanding economic opportunities. The material standard of living has distanced gradually from land-cum-agriculture dependence to urban living for an increasing number and percentage of the population. The literature on urbanization focused on unnumbered indicators that included rural territorial annexation and its transformation into a city [Ramachandran, 1992; Kundu, 1994; Bhagat, 2011, Pp. 10-12; Bhagat and Mohanty, 2009, Pp. 5-20; Saxena, 2014]. It took half a century for UP to register urban population as a percentage of rising total population from 12.9 in 1961 to 22.3 in 2011. In 2001 as well as in 2011 there were six million-plus populated cities in UP, namely, Lucknow, Allahabad, Agra, Kanpur, Varanasi, and Meerut. For India the percentage was 31.16 in 2011.

The paper addresses the following questions: Do the street labourers reflect forced labour? Do the street labourers come in conflict with the local labourers? Do the street labourers come within the institutional orbit?

In order to address the first question we try to unfold the living-cum-working conditions of the labourers who migrated mostly from rural areas to wait on the crossing of city roads in the six million-plus populated cities in Uttar Pradesh. We call it forced migration since the livelihood security of these people remained endangered in the rural areas in the absence of regular job-cum-income opportunities in combination with debt bondage.¹

In order to address the second question, we examine the tenure of jobs of the migrant labourers, their working hours, and wage rate and wages in the city labour market. In parallel, we examine if any conflict arose because of the

migrant street labourers waiting on the crossing of public roads for jobs. In order to address the third question, we examine the Acts formulated by the state that pledged to protect these street labourers.

The rest of the paper is structured as follows. In Section I we present the methodology and sample of the study. In Section II we examine the reasons why the migrant labourers wait on public roads at the destination points. We will examine this question by examining the living conditions of the labourers at the root as well as the living-cum-working conditions of the migrant labourers at the destination. In Section III we present state intervention by the Acts. Finally, in Section IV we offer implications and recommendations.

I. METHODOLOGY, SAMPLE, AND STUDY ZONE

The selection of the six cities in UP was purposive for each one had population of more than a million in Census year 2011 implying carrying capacity and geographic scope for a functioning labour market. We made pilot visits in each city to find out the locations/road crossings where labourers wait early in the morning for specified hours. In 2012 there were a total of 80 identified labour *chaurahas* in the six million-plus populated cities in UP. We selected a total of 24, four from each city based on geographic dispersal and the number of visible labourers early in the morning prior to their getting jobs (Box 1).

Box 1. Study Zone

Selected Zone & Labour Chaurahas	Number	Names
(1)	(2)	(3)
State	1	UP
City*	6	Allahabad, Kanpur, Lucknow, Agra, Meerut, Varanasi
Name of selected labour <i>chaurahas</i>	24	Rambag, Rajapur, Allahpur, Jhusi (Allahabad); Lalbangla, Mulganj, KDA, Govindpur (Kanpur); Engineering College, Udayganj, Nishant, Goyel Chauraha (Lucknow); Kamal Nagar, Loha Mandi, Shadra, Sikendra (Agra); Begum Bridge, Jail Chungi, Bagpat Adda, Sagasa (Meerut); Chetganj, Gurudham, Maidagini, Durgakund (Varanasi)

Note: * Each one is the headquarter of the respective district.

Box 2. Core Sample and Sub-Sample

Core Sample	Number
(1)	(2)
Labourers	240
Sub-Sample	
Contractors	24
Labour Mates	24
Representatives of labour unions	12
Representatives of NGOs	10

Note: Core Sample and Sub-Sample are non-additive. Sub-sample was a supplementary sample.

We took help of catalysts who constitute the sub-sample in selecting labour *chaurahas*. These included 24 contractors, one each from the selected labour *chaurahas*, as well as 24 labour mates who facilitated in the supply of labourers. We had informal conversations with 12 representatives of labour unions and 10 representatives of NGOs (Box 2).

We did not find any register maintained by the city administration or by the catalysts to find the total number of street labourers and we could not enumerate the total number of these labourers on the chaurahas. Based on pilot visits we selected 40 migrant labourers from each of the six cities

who varied intra-state and inter-state. We selected a total of ten (10) male labourers from each labour *chauraha*. The intra-state migrant labourers constituted 80.8 per cent and the rest were inter-state (Table 1).

Table 1. Distribution of Migrant Labourers to Selected Cities of UP

Destination Cities	Migrant Labourers				Total Number
	Intra-State		Inter-State		
	Number	Per cent	Number	Per cent	
(1)	(2)	(3)	(4)	(5)	(6)
Agra	29	14.9	11	23.9	40
Allahabad	33	17.0	71	5.2	40
Kanpur	40	20.6	0	0.0	40
Lucknow	26	13.4	14	30.4	40
Meerut	35	18.0	5	10.9	40
Varanasi	31	16.0	9	19.5	40
Total Labourers	194 (80.8)	100.0	46 (19.2)	100.0	240 (100.0)

Source: Field Survey, 2012.

Essentially it was rural to urban migration as 84.2 per cent of the labourers migrated from rural areas. In case of inter-state migration it was 97.8 per cent while in case of intra-state, it was 80.9 per cent [Field Survey, 2012].

Some Demographic Indicators of the Migrant Labourers

Of all the migrant labourers, 90.0 per cent were males. Of the male labourers, 80.8 per cent were intra-state. Of the female migrant labourers, 54.2 per cent were intra-state. Of all the labourers, 29.6 per cent were SCs, 45.0 per cent OBCs, 7.9 per

cent Minority (Muslims), 2.5 per cent STs and 15.0 per cent from General castes. 93.3 per cent of the labourers were in the working age (18 to 60) bracket. 78.8 per cent of the labourers were married. 41.7 per cent of the labourers were illiterate. Of the literate labourers, 41.2 per cent had education up to primary level [Source: Field Survey, 2012]. The migration to the selected cities was from within the state of UP and from the adjoining states, namely, Bihar, Jharkhand, Madhya Pradesh, and Chhattisgarh. We did not find any migrant waiting on the labour *chaurahas* from across the international border (Box 3).

Box 3. Inter-state and Intra-state Migrant Labourers to the Selected Cities in UP

Destination Cities	Intra-State Migrants (By Districts in UP)	Inter-State Migrants
(1)	(2)	(3)
Allahabad	Mirzapur, Azamgarh, Pratapgarh, Allahabad, Ballia, Bhadohi, Bahraich, Jaunpur	Madhya Pradesh, Chhattisgarh
Kanpur	Sultanpur, Faizabad, Allahabad, Unnao, Fatehpur, Raebareli, Basti, Lucknow, Kanpur, Kanpur Dehat, Mahoba, Ballia, Kaushambi	-----
Lucknow	Raebareli, Unnao, Sultanpur, Hardoi, Barabanki, Gonda, Bahraich, Lakhimpur Kheri	Bihar, Chhattisgarh
Agra	Agra, Jhansi, Mathura, Farrukhabad, Aligarh, Auraiya, Mahoba	Madhya Pradesh
Meerut	Meerut, Agra, Moradabad, Muzaffarnagar, Hapur, Baghpat, Shahjahanpur, Bareilly, Sitapur	Bihar, Madhya Pradesh, Jharkhand
Varanasi	Varanasi, Sonebhadra, Mirzapur, Ghazipur, Mau, Chandauli, Sultanpur, Azamgarh, Pratapgarh, Bhadohi	Madhya Pradesh, Bihar

Source: Field Survey, 2012.

II. MIGRANT LABOURERS' CONDITIONS AT THE OUTMIGRATION ZONE

The major reason for the migrant labourers to wait on public roads in cities was landlessness or inadequate landholding that failed to fulfil the subsistence needs of the households at the

migration-zone. 54.6 per cent of the migrant labourers were landless. Of those having land, 67.8 per cent had land less than 2.0 acres. Thus, the landholders had marginal landholding (Table 2).

Table 2. Size of Landholding of Migrant Labourers at Root

Landholding (Acres)	Intra-State		Inter-State		Total	
	Number	%	Number	%	Number	%
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Landless	112	57.3	19	41.3	131	54.6
Up to 1.0	26	13.4	12	26.1	38	15.8
1.0 to 2.0	28	14.4	8	17.4	36	15.0
2.0 to 4.0	19	9.79	4	8.7	23	9.6
4.0 to 6.0	3	1.5	1	2.2	4	1.7
Above 6.0	6	3.1	2	4.3	8	3.3
Total	194(80.8)		46(19.2)		240	100.0

Source: Field Survey, 2012.

The related reasons were income below less than Rs. 2,500.00 income per month subsistence requirements and indebtedness. including households earning no income Table 95.8 per cent of the migrant households earned 3).

Table 3. Income of the Households of Migrant Labourers per Month at Root

Income per Month (Rs.)	Intra-State		Inter-State		Total	
	Number	% of Total	Number	% of Total	Number	% of Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
No income	25	12.9	7	15.2	32	13.3
Below 500	49	25.2	11	23.9	60	25.0
501 to 1,000	55	28.3	16	34.8	71	29.6
1,001 to 1,500	28	14.4	6	13.0	34	14.2
1,501 to 2,500	28	14.4	5	10.9	33	13.7
Above 2,500	9	0.5	1	2.2	10	4.2
Total Labourers	194(80.8)		46(19.2)		240	100.0

Note: The unemployed section in the working age and unpaid home workers reported no income.
Source: Field Survey, 2012.

The income earned by most of the households was below the subsistence level in the absence of job opportunities in agriculture throughout the year. Non-farm rural activities like animal husbandry and forestry could not be relied upon due to shrinking common resources. Land development through investment was beyond the capacity of the landless households while marginal landholding was inadequate to sustain the households by subsistence guarantee. 41.3 per cent of the migrant labourers were employed in the rural economy for a period of less than three months per year and 37.5 per cent were employed for a period between three and six months. Thus, 21.3 per cent were in employment for more than six months in the rural economy, which implied that for at least 79.7 per cent it was a compulsion to migrate (Table 4).

Table 4. Employment Tenure of the Migrant Labourers per Year at Root

Employment Tenure (Months)	Intra-State		Inter-State		Total	
	Number	%	Number	%	Number	%
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Less than 3	79	40.7	20	43.5	99	41.3
3 to 6	72	37.1	18	39.1	90	37.5
6 to 9	42	21.6	5	10.9	47	19.6
Above 9	1	0.5	3	6.5	4	1.7
Total Labourers	194(80.8)		46(19.2)		240	100.0

Source: Field Survey, 2012.

24.2 per cent of the migrant labourers were indebted, which was 24.7 per cent of all intra-state labourers, and 21.7 per cent of all inter-state labourers. 89.7 per cent of the households borrowed from non-institutional sources. 75.9 per cent of all the households borrowed from *mahajans* (informal money lenders). The other non-institutional sources were relatives and friends. The institutional sources were banks (Table 5).

Table 5. Borrowing by Migrant Labourers by Sources at Root

Borrowing (Rs.)	Workers	Sources of Borrowing				Total
		Institutional Banks	Non-institutional			
			Mahajans	Relatives	Friends	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Less than 10,000	No.	1	23	5	1	30
	% of Total	1.7	39.7	8.6	1.7	51.7
10,001 to 25,000	No.	2	12	1	1	16
	% of Total	3.4	20.7	1.7	1.7	27.6
25,001 to 50,000	No.	2	7	0	0	9
	% of Total	3.4	12.1	0.0	0.0	15.5
Above 50,000	No.	1	2	0	0	3
	% of Total	1.7	3.4	0.0	0.0	5.2
Total Labourers	No.	6	44	6	2	58
	% of Total	10.3	75.9	10.3	3.4	100.0

Source: Field Survey, 2012.

Indebtedness was because of expenditure on health, rituals, and food that covered 77.6 per cent of total outstanding debt (Table 6).

Table 6. Reasons for Outstanding Debt of Migrant Labourers at Root

Reasons	Intra-State		Inter-State		Total	
	Number	%	Number	%	Number	%
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Rituals	16	33.3	2	20.0	18	31.0
Health	14	29.2	5	50.0	19	32.8
Food	7	14.6	1	10.0	8	13.8
Shop/Small Business	4	8.3	1	10.0	5	8.6
Others	7	14.6	1	10.0	8	13.8
Total Borrowers	48(82.8)		10(17.2)		58	100.00

Source: Field Survey, 2012.

The major reasons for migration of the labourers, with variations by city-destinations, are provided in Table 7.

Table 7. Causes of Migration of Labourers to Million-plus Cities in UP

Causes (1)	Labourers (%) (2)
Job-search	68.8
Distress-driven	61.3
Poverty-led	6.7
Wage-differential (ex-pected)	9.6
Anonymity	4.6
Total Labourers	240 (100.0)

Source: Field Survey, 2012.

Note: The questions were asked to the migrant labourers at the destination in Hindi like 'Palaayan (migrate) kyo karte ho?' In response, the labourers mentioned more than one reason but mostly it was 'Majburi (distress) me jaana parta hai', garibi

(poverty) ke karan (cause), kaam-dhandha (roti-roji or job) mil jai saharme (in city) etc. Majburi and Roti-roji were repeated by most of the migrant labourers.

Consequences of Migration

Social network, and not formal advertisement through print or electronic media, helped the labourers to migrate to the cities to occupy public roads. Their assembly at the road crossings was not questioned by the administration. Physical visibility of these street labourers helped them get jobs, and we found that 78.8 per cent of the migrant labourers got work for a tenure of more than six months per year at the destination. This was similar for both intra-state and inter-state. 19.6 per cent of the labourers got work for a tenure between three and six months per year (Table 8).

Table 8. Job Tenure for the Migrant Labourers per Year at Destination

Job Tenure (Months)	Intra-State		Inter-State		Total	
	Number	%	Number	%	Number	%
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Less than 3	1	0.5	3	6.5	4	1.7
3 to 6	42	21.6	5	10.9	47	19.6
6 to 9	72	37.1	18	39.1	90	37.5
Above 9	79	40.7	20	43.5	99	41.3
Total Labourers	194(80.8)		46(19.2)		240	100.0

Source: Field Survey, 2012.

In our study we also found that 65.9 per cent of the labourers earned between Rs. 2,001 and Rs. 5,000 per month in the cities (Table 9).

Table 9. Income of Migrant Labourers per Month at Destination

Income Brackets (Rs.)	Intra-State		Inter-State		Total	
	Number	%	Number	%	Number	%
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Up to 1,500	7	3.6	2	4.3	9	3.8
1,501 to 2,000	20	10.3	8	17.4	28	11.7
2,001 to 3,000	38	19.6	7	15.2	45	18.8
3,001 to 4,000	55	28.3	11	23.9	66	27.5
4,001 to 5,000	41	21.1	6	13.0	47	19.6
Above 5,000	33	17.0	12	26.1	45	18.7
Total Labourers	194(80.8)		46(19.2)		240	100.0

Source: Field Survey, 2012.

The street labourers negotiated with the employers and the contractors to fix the wage rate. 59.6 per cent of the labourers got wages at time rate. The major labour absorption sector was construction works (Appendix Table 1). The average wage rate per day for migrant labourers was Rs. 177.00, with Rs. 176.00 intra-state and Rs. 180.00 inter-state. The average working days per month were 18 and the average working hours per day was 9.0. Both varied between cities. 72.1 per cent of the migrant labourers used to carry cash savings to their rural root, while 12.1 per cent used to remit through co-workers, friends and relatives. 7.9 per cent of the labourers could not save anything. The inter-state migrant labourers used to visit their native places once in six months while the intra-state migrant labourers once in three months, implying non-confinement of labourers *de jure* and confinement *de facto* [Source: Field Survey, 2012].

Work Environment

80.8 per cent of the migrant labourers reported non-availability of first aid and safety kit at the worksite; 80.4 per cent reported absence of toilet; 79.2 per cent reported absence of rest room/shed; 97.5 per cent reported availability of drinking water at worksites [Field Survey, 2012]. Thus the work environment was adverse for the migrant labourers (Box 4).

Box 4. Work Environment for Migrant Labourers

Work Environment
Insecurity, drudgery, abusive behaviour of employer, wage-cut, pressurized to work more hours for same wage, no protection against injury, no leave, no night shelter, and no provision of food.

Source: Field Survey, 2012.

In terms of living conditions, 50.8 per cent of the migrant labourers were homeless in the city; 15.0 per cent lived in *Jhopris*, while 10.8 per cent were commuters on daily basis (Table 10).

Table 10. Housing Conditions of Migrant Labourers at Destination

Types of Houses	Intra-State		Inter-State		Total	
	Number	%	Number	%	Number	%
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Homeless	107	55.1	15	32.6	122	50.8
Pucca	14	7.2	6	13.0	20	8.3
Semi-pucca	24	12.4	8	17.4	32	13.3
Kutchra	3	1.5	1	2.2	4	1.7
Jhopri	20	10.3	16	34.8	36	15.0
Daily Commuters	26	13.4	0	0.0	26	10.8
Total Labourers	194 (80.8)		46 (19.2)		240	100.0

Source: Field Survey, 2012.

The rural average wage per month was an estimation based on approximately 15 days, work per month for the migrant labourers who worked there mostly as agricultural labourers. For intra-state labourers it was Rs. 877.5 per month and for inter-state labourers it was Rs. 724.3. The city work days per month on an average was 18 for both intra-state and inter-state migrant labourers.

The average wages per month at the destination for the migrant labourers was around four times what they used to earn at the root for both intra-state and inter-state. This did not follow from any abrupt elevation in productivity of these labourers but because of the very nature of urban works catering to urban market by commoditisation of resources which had often been shared cost-free

in rural areas. In rural areas many of the consumables are produced and shared collectively not only intra-household but also inter-households, outside the market mechanism. Once produced goods enter the market, exchange-value is the determining factor; in our understanding cost-price sets in motion a price spiral that is more of an urban phenomenon rather than in rural areas. Also, the nature of wage-labour and the work profiles are different in urban/city areas; works are often accompanied by machines and tools that lead to higher productivity; the nature of works-techniques get

reflected in productivity. Further, there is much larger demand for labour in the cities is because of scale of production/services that are absent in rural areas. The agricultural wage rate had no impact on the urban wage rate. The absence of work in agriculture during most of the period per year in outmigration zone implies absence of functional wage rate in rural areas; thus, the labourers migrate for survival that we identified as mostly distress-driven; they migrate for any positive wage rate. Hence, we claim that agricultural wage rate had no impact on the destination/urban wage rate. (Table 11).

Table 11. Average Wages per Month of Migrant Labourers at Root and Destination

Locations	Migrant Labourers	Average Wages (Rs.)	Number of Workers	% of Labourers
(1)	(2)	(3)	(4)	(5)
Root	Intra-State	877.5	194	80.8
	Inter-State	724.3	461	9.2
	Grand Average	848.2	240	100.0
Destination	Intra-State	3253.2	194	80.8
	Inter-State	3366.3	46	19.2
	Grand Average	3274.9	240	100.0

Note: Income data in the rural outmigration zone was based on income per month reported by 54.6 per cent of the labourers who were landless and worked as wage-labourers in agriculture and related rural activities.

Source: Field Survey, 2012.

Do Street Labourers Reflect Forced Labour?

Forced labour is 'not defined by the nature of the work being performed (which can be either legal or illegal under national law) but rather by the nature of the relationship between the person performing the work and the person exacting the work' [ILO, 2012, p. 19]. The question is if it is forced labour by processes of labour engagement and consequences by wage payment and work environment at the city destination. In Uttar Pradesh (UP), the culture of silence of the income-poor landless indebted people make the difference between forced labour and bonded labour blurred, the latter used to prevail by

alternative nomenclature such as *bandhwa mazdoor*, *bandhak*, *sevak*, *harwah*, *bajgee*, etc., observed in both agriculture and unorganized industries [ILO, 2001, p. 6; Kripa Shankar, 1996, Pp. 2215-2217; Mahasveta Devi, 1981, p. 1010]. If prevalence of bonded labour stands illegal post-enactment of the Bonded Labour System (Abolition) Act 1976, by the Government of India and if the same or similar initial conditions exist, then the question remains if we should call it forced labour with one degree less than being bonded labour since they are not physically confined as enforced by the creditor in case of bonded labour. The ILO Forced Labour Convention, 1930 (No. 29) considered forced labour as 'all work or service extracted from any person

under the menace of any penalty and for which that person has not offered himself (or herself) voluntarily' [ILO, 2007, p. 19; UNDP, 2015, p. 41], we expand the canvas to include labour that is offered in an adverse environment for the labourers offering labour as forced labour [UNDP, 2015, p. 41]. Force is not necessarily physical but also psychological. Physical coercion may be absent but one may feel forced to leave the root because of inter-generational poverty and indebtedness. It is not always true that the migration to cities will emancipate them for, they move from one disadvantaged condition to another adverse inclusion [Roy, 2013, p. 41]. 'Labour may be forced not only owing to physical force....but also owing to hunger and poverty which compels (a worker) him to accept employment for remuneration which is less than the statutory minimum wage' [ILO, 2001, p. 9]. In a situation of work at piece rate and in a non-comparable frame of labour-hours, the condition of paying less than the minimum wage rate does not reflect much, apart from the fact that the minimum wage rate as announced by the state Government remains far from being implemented for the workers in circulation in the unorganized sector in India. The migrant labourers waiting on the crossings of public roads in the cities in India as a gateway to enter into the labour market did not come within the scrutiny of the ILO so far [ILO, 2001a, p. 2].

'The ultimate purpose of forced labor - into which workers enter through failed systems of recruitment - is almost always economic exploitation through payments to workers below the level that appeared to have been mutually agreed upon and negotiated' [Andrees & Belser, 2009, p. 4]. We observed violation of wage negotiations by wage cut and imposition of long working hours since the negotiation was oral and unequal. The excess supply of labourers on the

labour chaurahas in the cities in UP on a daily basis lessened their bargaining power. Extremely unequal relations between the city-based employers and migrant labourers posed doubt on the possibility of a wage rate 'mutually agreed upon and negotiated'. The labourers negotiated the wage but any bargaining for fixation of wage rate by the street labourers made such negotiation fractured, chiefly because of the adverse conditions of the labourers which forced them to enter into the city labour market. Since these labourers were mostly migrants from rural areas, who were illiterate and poor and indebted, their voices were suppressed. They had no exchangeable assets and no elastic time for job search, since not getting job in one day would mean starving for most of them. Being migrants, they could not expect to hire productive assets from any asset owner for providing services in the city. In the absence of secure space they could not shoulder the risk of buying any productive assets in the city, even if they acquired the economic capacity, as they would not be able to protect those. The chauraha-specific labour contractors did not have much role to play in wage negotiations. The labour unions were apathetic towards these workers, which reinforced the disempowerment of the labourers.²

The positive rural-urban wage-differential was not the determinant of migration for these labourers. The very fact that most of them had no job for tenure more than six months in the rural areas parallel to their landlessness forced them to migrate to the cities. Historically, the urban nature of work for wages at piece rate or time rate offers a higher wage rate than the rural one. But since jobs were not available at the outmigration zone for most of the year, any comparison of wage rates between rural and urban to explain migration is meaningless. That the labourers used to get jobs on an average of 18 days per month and over six

to nine months per year at the destination implied the positive probability of getting jobs in the selected cities in UP. This also implied that these cities had the capacity to carry these labourers who waited for jobs. These jobs were manual, low-quality and delinked from education and skill.

The job contract was oral without any indicators of job security. The job itself was not regular. The employers went on changing within a short time-span. Once the employer-specific work was over, the labourers would come back to their chaurahas to search for another job and another employer, or move to another city. They had no effective power to influence the wage rate. It was determined from the demand side because of the unlimited supply of labourers on the crossing of roads. Employment of one fraction of the labourers did not create any vacuum in the chaurahas. These labourers reflected free entry into, and free exit from the city labour market. This is not to be seen as 'free wage-labour' for it was not webbed in the macro market mechanism. With a sympathetic critique of Tom Brass, we quote from Brass to amplify this, 'the reserve army composed of deskilled workers drawn into the labour process to undermine the bargaining power of free workers.....that "capitalism" (*critique*) finds a use of workers who are not free' [Brass, 2016, p. 31]. We have left a grey space - not necessarily capitalism-linked and it operates locally in fragments in a rudimentary form. The rural economy in parallel reflected the inertia of landlords to invest on land to retain labourers.

More than half of the migrant labourers were homeless in their destinations. City-housing was a remotely attainable good for them as they were not permanent migrants and were unable to maintain two residential houses. The work environment showed their adverse situation at the

bottom of the labour market in the city. The migrant labourers had no preference for any particular city and were ready to move to any place in any region. The intra-state migrants came from many districts of Uttar Pradesh (Box 3). The implication is that the survival instinct of the labourers forced them to migrate from their native places to reach the occupation space even if that meant being homeless at the destination. They migrated on their own and there was no *thekedar* (contractor) to take them to a specific employer for work. Thus, there was no system of advance wages also for them. They waited on the crossing of roads in expectation of work through an employer/contractor. They had no ex-ante information about the worksites or the nature of work and they often did not come in contact with the employer when he operated through his agents. The labour chaurahas were the assembly points of available labourers who were ready to work on demand. The demand side was revealed when the contractors reached the chaurahas, generally on a motorcycle with a pillion rider, to select the required number of labourers based on the fulfilment of the skill required and the wage rate agreed upon. The labourers encircled the man on the motorcycle to negotiate and offer themselves for work. The negotiation would be usually settled, the contractor would go back after telling the labourers to join the job. The labourers would decide their mode of transport and reach the worksite by the specified time. The labourer was free not to accept the offered wage rate in which case he would search for another employer or starve or go back to the village; the last option would be unwelcome except for daily commuters. Hence, the labourer preferred any wage rate to the absence of job or to a prolonged wait on the road since early morning. The migrant labourers went back to their native places once they completed their works at the city-destination. There were a number of reasons for going back like rural living

preferred to urban living by kinship-rituals-culture-tradition, work in agriculture sector, and repayment of outstanding debt. As most of them opined, had they got assured job opportunities at their native places on a regular basis even at a wage rate much lower than that of the urban wage rate they would have been less inclined to migrate to urban areas. We call it forced labour since the labourers had to migrate in an initial condition of landlessness, indebtedness and absence of subsistence guarantee at the root. The labourers migrated to large cities to wait on public road being unaware of the nature of works they will be asked to perform in an unknown location. This is irrespective of the length of time the labourers spent at the destination [ILO, 2012, p. 35]. The adverse inclusion of the street labourers in terms of absence of any security card, job card, registration, insurance and derivative indicators at the city-destination was the result of the adverse conditions at the migration zone.

Do Migrant Street Labourers Invite Conflict?

We observed a peaceful co-existence between labourers in different economic sub-zones within the same city economy. The street labourers were from the same or similar states; this was conducive to their harmonious co-existence at the bottom of the labour market. There was no crowding out because of the carrying capacity of the selected cities. The migrant street labourers did not dislodge the local labourers. The former set is totally unorganised while the latter is partially organised as they had some specific space and network to operate in. In the field we observed that the city-resident labourers were engaged in works that were different from those of the migrant labourers, the former at a wage rate higher than that of the migrant labourers. We did not cover formally the response of the city-resident labourers. The question of downward

flexibility in wage rate in the city labour market because of the entry of the labourers from the outmigration zone was not examined by us, as each category was illiterate or semi-literate with no labour unions protecting either one.

The street labourers, most of whom were intra-state migrants, lived in the same culture zone as the local labourers. The latter too were also potential migrants to other destinations. Most of the labourers were in multiple distress-driven occupations, so that a '*bhai chaara*' (fraternity) developed among the migrant and local labourers. One conjecture is that the labourers, both local and migrants, face similar socio-cultural conditions that bond them in a low level equilibrium. Occupying public road by the migrant labourers was not a concern for the local labourers, nor was it a matter of concern for the city administration because of the blurred distinction between private space and public space, apart from annexation of public space for private appropriation in the selected cities in UP.

Economic distress was the plank of local unity among the labourers. This was, however, delinked from any labour union and so the unity could not get crystallised as a powerful platform for the labourers to effectively bargain for wage rate, working hours and job security. The street labourers were incapacitated to enter into the organised labour market because of their irrelevance for urban industrial jobs, obstructing them from being organised as an industrial working class. Supply of labour by the street labourers created demand for labour in the city economy that made the urban wage rate flexible downward but still remaining much above the wage rate in the rural agricultural job. The street labourers willing to be engaged in any odd job for any tenure created space for them in the city labour market, the space expressed as additional demand for

labour. The work profiles or the labour compartments of the local labour and the street labourers were different in the selected cities. The migrant workers were at the bottom of the city's labour market by the nature of works and wage rate.

The street labourers thus learnt to live in distress while the city administration did not feel any necessity to ensure secure living for these labourers. Since the street labourers migrated on their own, it was their responsibility to find living spaces, which most of them failed to do. They were delinked from local mafia and so they remained outside the circumference of public suspicion. The very scattered nature of migrant labourers working for tenure not foreseen in the city economy, and the unsettled nature of such labourers in absence of permanent migration did not draw the attention of local mafia as the latter could not convert them into vote banks or agents of extra-legal activities. The work-cum-living of the street labourers in the cities did not confer them a city identity. They used to go back to their native places each year not because they were mostly homeless in the destination cities but because of the initial conditions that centred on land-agriculture, house, environment, social relations, family attraction, and debt repayment.

III State Intervention: Acts

India is a signatory to the Forced Labour Convention, 1930 and to the Abolition of Forced Labour Convention, 1957, with ratifications dated 30.11.1954 and 18.05.2000, respectively [ILO, 2007, Pp. 128-129; Mishra 2001, p. 8]. The ILO Declaration on Fundamental Principles and Rights at Work adopted in 1998 pledged to eliminate all forms of forced or compulsory labour [ILO, 2007, p. 1]. The fact remains that 'labour laws, by and large have been enacted to

meet the need to regulate labour relations in the organized sector with determinate and relatively stable employer-employee relations.... (that) are hardly applicable to the informal sector that is characterized by a fuzzy and temporary employer-employee relationship at the best' [Chandra, 2009, p. 480]. It remains a dilemma which Acts enacted by the Government of India encompass the migrant street labourers in the cities [GoI, 2011, Pp. 4-6]. Since most of these labourers were engaged by contractors/employers and since 19.2 per cent of all the migrant labourers were inter-state migrants, first we scrutinize how well they fit in the provisions of The Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979, of the Government of India.

The 1979 Act applies to every 'establishment' employing 'five or more inter-State migrant workmen' recruited through a 'contractor' that includes a sub-contractor by whatever name called, 'with or without the knowledge of the principal employer in relation to such establishment'. The Act provides that 'No principal employer of an establishment to which this Act applies shall employ inter-state migrant workmen in the establishment unless a certificate of registration in respect of such establishment issued under this Act is in force'. The contractor must have a license to recruit workmen with prior information provided on 'the terms and conditions of the agreement or other arrangement under which the workmen will be recruited, the remuneration payable, hours of work, fixation of wages....' [GoI, 1979]. The contractor must 'issue to every inter-State migrant workmen (sic), a pass book affixed with a passport size photograph of the workman' indicating (i) the name and place of the establishment wherein the workman is employed; (ii) the period of employment; (iii) the proposed rates and modes of payment of wages;

(iv) the displacement allowance payable; (v) the return fare payable to the workman on the expiry on the period of his employment....; (vi) deductions made. The wage rate for an inter-state migrant workman must not be less than the wages fixed under the Minimum Wages Act, 1948. The associated facilities, as provided by the Act, for migrant workmen included the following: '(a) to ensure regular payment of wages to such workmen;....(d) to provide and maintain suitable residential accommodation to such workmen during the period of their employment; (e) to provide the prescribed medical facilities to the workmen, free of charge; (f) to provide such protective clothing to the workmen as may be prescribed...' [GoI, 1979, p. 8].

The 1979 Act pledged 'to ensure suitable conditions of work to such workmen having regard to the fact that they are required to work in a State different from their own State' [GoI, 1979, p. 8]. In our survey the migrants to the cities in UP were from 'similar states' by language-culture so that assimilation at the bottom of the labour market was natural from the supply side. There was no crowding out for being inter-state migrants as the intra-state and inter-state migrant labourers were natural allies culturally. So far as demand side was concerned, the employers in the cities in UP were neutral between intra-state or inter-state migrant labourers so long as their skill requirement was fulfilled. Even if the intra-state and inter-state migrants were thus perfect substitutes, there was no crowding out because, as pointed out earlier, the labour compartment for the migrant street labourers and that of the city-resident labourers were different. The inter-state wages per month was in fact marginally higher than that of the intra-state migrant labourers. We did not find any gap between the inter-state and intra-state migrant labourers geo-culturally for one simple reason which was that intra-UP

migrants often travelled long distances incurring high cost, and stood on the *chaurahas* on the same scale as the inter-state migrants did, because of the geographic vastness of UP. Excepting the intra-state daily commuters all the intra-state and inter-state migrant labourers experienced the same conditions of work at the city-destinations of UP. Neither the contractors nor the labourers had any idea about the provisions of the 1979 Act. The obscure employer-employee relation made fixing the responsibility of security of the labourers on the employer difficult. We did not find the state performing any protective role for the labourers waiting on labour *chaurahas* in the selected cities in UP.

Labour laws like The Minimum Wages Act, 1948, of the Government of India, aimed to set a flow of rights that made provisions to 'fix the number of hours of work which shall constitute a normal working day' and 'minimum time rate wages for piece work'. This provision abides by the provisions of the Payment of Wages Act, 1936 [GoI, 1948, p. 8]. The rural wage rate (Rs. 848.2 per month or Rs. 56.5 per day if the labourer worked for 15 days per month) was far behind the minimum wage rate declared by the Government of UP. The urban wage rate for labourers on labour *chaurahas* per day was Rs. 181.94 that was also far behind the minimum wage rate announced by the Government of UP (Table 10 based on works for 18 days per month). The minimum wage rate per day as declared by the Government of UP through Order dated 26.01.2014 was Rs. 284.63 for unskilled, Rs. 313.10 for semi-skilled, and Rs. 350.72 for skilled labourers (GoUP, Order No. 194/36-3-2014-07/04 dated 26.01.2014). In general, the developing countries find it difficult to enhance wage rate in agriculture for 'the under investment in public goods in agriculture' or declining public expenditure on agriculture as a

percentage of total government spending as evidenced from 44 developing countries [ILO, 2011, Pp. 87-88].

The Act made it mandatory for every employer to maintain 'registers and records giving such particulars of employees employed by him, the work performed by them, the wages paid to them, the receipts given by them....' [GoI, 1948, p. 10]. We did not find any such registers maintained by the employers/contractors since the jobs were based on hire and fire often outside public scrutiny. The labourers had no idea about the existence of any such Act. The Labour Union representatives in the organised sector were indifferent about the street labourers. The modus operandi of labour employment through labour chaurahas in the cities of UP reflected its own dynamics that was outside the orbit of the state.

IV SUMMARY FINDINGS

- * The major reason for migration to cities was landlessness or inadequate landholding that failed to fulfil the subsistence needs of the households at the migration-zone.
- * Physical visibility of the migrant street labourers helped them get jobs for tenure of more than six months per year at the destination.
- * The average wages per month at the destination for the migrant labourers, both intra-state and inter-state, was around four times what they used to earn at the root. The agricultural wage rate had no impact on the urban wage rate.
- * The positive rural-urban wage-differential was not the determinant of migration for these labourers. The joblessness of most of them for more than six months in the rural areas along with their landlessness forced them to migrate to the cities.

- * The assembly of street labourers did not show any sign of solidarity or conflict.
- * The migrant street labourers did not crowd out the local labourers.
- * Economic distress of the households of the labourers as the initial condition was the plank of unity among the labourers in the city. This unity was delinked from any labour union. Hence, the local unity did not get crystallized as a platform for the labourers to bargain.

The supply of labour by migrant labourers waiting on public roads was their adverse inclusion at the bottom of the city-based labour market for the following reasons:

1. The labourers had to migrate from the rural region to the cities in adverse economic conditions characterised by landlessness and indebtedness (initial condition).
2. The labourers had to wait unauthorized on the public roads in the cities (processes).
3. The labourers had no control over their work relations in the city economy (consequences).
4. The labourers were confined de facto for they had no right to leave while on job (consequences).

V. CONCLUSIONS AND RECOMMENDATIONS

The street labourers waiting on road crossings of the selected cities reflected a case of forced labour. There was unobstructed in-migration of labourers mostly from intra-state and inter-state rural areas, the latter being 'similar states' by language and culture, since big cities provided economic opportunities that retained the labourers for the major period of the year.

We recommend a dual strategy to stop forced labour. One is to ensure regular wage-employment at the root rural areas, and the other is to ensure social security of the labourers at the

destination. The first one is a long-term strategy and the second one is a short-term strategy but both can go parallel.

We propose introducing an Act by the Government of India to address the requirements of street labourers. Pending this, we propose that the city administration

- * recognizes the existence of the street labourers and provide roofed labour colonies with sanitation facility for accommodating the assembled migrant labourers;
- * provides the labourers identity cards;
- * identifies the private contractors/employers and makes them accountable by registering the labourers encompassing both

inter-state and intra-state migrant labourers, engaged by them, and ensuring their security at the worksite;

- * provides night shelter with basic utilities like drinking water, toilet and blanket for the migrant labourers;
- * makes sure that the employer provides safe drinking water, sanitation, cost-free medical care for all the labourers encompassing both inter-state and intra-state migrant labourers;
- * assists the street labourers in distress with a toll free Help Line number.

The long-term strategy requires agrarian transformation supplemented by rural public works to retain the labourers at the root.

Appendix Table 1. Wage Rates (Rs.) per Day of Migrant Labourers by Nature of Works in Selected Cities

Nature of Works	Wage Rate (Allahabad)	Wage Rate (Kanpur)
(1)	(2)	(3)
Mason	225-250	225-250
Beldar*	120-150	130-150
Painter	200-250	200-250
Carpenter	200-250	200-250
Head Load Worker	120-150	120-150

Note: * Beldar - The labourer engaged in mixing materials like sand-cement, and also engaged as head load worker as required in the construction sector. He is responsible to supply mixed materials to the mason ("raajgir" in local parlance)

Comparable data for other selected cities could not be collected for non-response of labourers, differences in work profile etc.

Source: Field Survey, 2012.

NOTES

1. To the best of our scrutiny, we did not find ILO Forced Labour Convention, 1930 referred to street labourers as one of the categories of forced labour, [ILO, 2007, Pp. 19-33].

2. The information drawn from the sub-samples was qualitative in nature; the very fact that the street labourers in circulation over cities were not members of labour unions may be taken to imply that the labour unions were not concerned to envelop them in the union net. The migrant street labourers had no idea about the labour unions they could seek membership.

REFERENCES

- Andrees, B. & P. Belser, 2009; 'Forced Labour, Coercion and Exploitation in the Private Economy', Lynne Rienner, London.
- Bhagat, R. B., 2011; Emerging Pattern of Urbanization in India, *Economic & Political Weekly*, Vol. 46, No. 34.
- Bhagat, R. B. and S. Mohanty, 2009; Emerging Pattern of Urbanization and the Contribution of Migration in Urban Growth in India, *Asian Population Studies*, Vol. 5, No. 1.
- Brass, Tom, 2016; Labour Regime Change in the Twenty-First Century, AAKAR BOOKS, Delhi.
- Chandra, Navin, 2009; 'Labour Rights and the Working Poor', *Indian Journal of Labour Economics*, Vol. 52, No. 3.

- Government of India, 1948; The Minimum Wages Act, 1948, 15th March.
- Government of India, 1979; The Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act.
- Government of India, Ministry of Labour and Employment, 2011; Report of the Working Group on Labour Laws & Other Regulations for the Twelfth Five Year Plan (2012-17).
- ILO, 2001a; Stopping Forced Labour. Geneva.
- ILO, 2007; Eradication of forced labour, Report III, Geneva.
- ILO, 2011; World of Work Report, Making Markets Work for Jobs, Geneva.
- ILO, 2012; Global Estimate of Forced Labour. Geneva.
- International Labour Office, (ILO), 2001; A perspective plan to eliminate forced labour in India. Declaration-/WP/2/2001, July. Geneva.
- Korra, V., 2011; Nature and Characteristics of Seasonal Labour Migration: A Case Study in Mahabubnaga District of Andhra Pradesh, *Indian Journal of Labour Economics*, Vol. 54, No. 3.
- Kripa Shankar, 1996; 'Bonded Agricultural Labour in India of 1996, Case of Hallia Block in UP', *Economic & Political Weekly*, August.
- Kundu, A., 1994; Pattern of Urbanization with Special Reference to Small and Medium Towns in India, G.K. Chandra (Ed.), Sectoral Issues in Indian Economy, Har Anand Publications, New Delhi.
- Mahasveta, Devi, 1981; 'Contract Labour or Bonded Labour?', *Economic & Political Weekly*, June 6.
- Majumder, B., 2004; 'Informalisation of Global Labour and Survival of Local Workers', *Productivity*, Vol. 44, No. 4, January-March.
- Mishra, L., 2001; A perspective plan to eliminate forced labour in India, Working Paper, ILO, Geneva, July.
- NCEUS, GoI, 2008; *Report of the Conditions of Work and Promotion of Livelihood in the Unorganized Sector*, New Delhi.
- NCRL, 2002; *Report of the National Commission of Rural Labour 2002-1991-1967*, Academic Foundation, New Delhi.
- Oberai, A.S. and Singh, H.K.M., 1983; Causes and Consequences of Internal Migration: A Study in the Indian Punjab, Oxford University Press, New Delhi.
- Ramachandran, R., 1992; Urbanization and Urban System in India. Oxford University Press, New Delhi.
- Roy, Tirthankar, 2013; Bringing Economics Back in Labour History: A Study of the Historical Patterns of Labour Supply in India, *Indian Journal of Labour Economics*, Vol. 56, No. 1.
- Sahu, G. B. and Das, B. 2010; Urban Labour Market and the Return of Migration, *Review of Development & Change*, Vol. XV, No. 2.
- Saxena, K. B., 2014; Urban Growth and Exclusion of the Poor, *Social Change*, Vol. 44, No. 4.
- Singh, C. S. K., 2002; Daily Labour Market in Delhi, Structure and Behaviour, *Economic & Political Weekly*, March 2.
- UN-Habitat, 2003; United Nations Human Settlement Programme. The Challenge of Slums. Earthscan Publications Ltd. London.
- UNDP, 2015; Human Development Report, Oxford University Press, New York.

DOCUMENTATION

The purpose of this section is to make available to the readers official documents such as reports of committees, commissions, working groups, task forces, etc., appointed by various ministries, departments, agencies of central and state governments and international organisations, which are not readily accessible either because they are old, or because of the usual problems of acquiring governmental publications, or because they were printed but not published, or because they were not printed and remained in mimeographed form. We also present in this section, official documents compiled from scattered electronic and/or other sources for ready reference of the readers. It will be difficult and probably not worthwhile to publish the documents entirely. We shall publish only such parts of them as we think will interest our readers. The readers are requested to send their suggestions regarding official documents or parts thereof for inclusion in this section.

We are also keen to publish Papers, Notes or Comments based on the material included in this section. We invite the readers to contribute the same to our journal, which we shall consider for publication in subsequent issues of the journal, after the usual refereeing process.

In the present section, we publish:

1. Report of The Jha Committee on Foodgrain Prices for 1964-65 Season, Chairman: L.K. Jha, Department of Agriculture Ministry of Food and Agriculture Government of India
2. Extract from S.R. Sen Committee Report on Cost of Cultivation, Chairman: S.R. Sen.
3. Report of the Expert Committee for Review of Methodology of Cost of Production of Crops G.O.I., Chairman: C.H. Hanumantha Rao.
4. Report of The Expert Committee Under The Chairmanship of Prof. Y.K. Alagh to Examine Methodological Issues in Fixing MSP.

5. Committee on Agriculture (2013-2014) Fifteenth Lok Sabha Ministry of Agriculture (Department of Agriculture and Cooperation) Pricing of Agricultural Produce Sixtieth Report Lok Sabha Secretariat, New Delhi March, 2014 / Phalguna, 1935 (Saka).
6. Evaluation Study on Efficacy of Minimum Support Prices (MSP) on Farmers, (DMEO Report No.231) http://pmin-dia.nic.in/knowindia/images/img_symb1.gif NITI Aayog Development Monitoring and Evaluation Office Government of India New Delhi-110001, January, 2016.
7. Extracts from Report of Farmer's Commission
8. Prices, Costs of Production and Terms of Trade of Indian Agriculture
9. Minimum Support Prices Recommended by CACP and Fixed by Government (Crop Year), 3-11-2017.
10. Madhya Pradesh - Summary of the Council of Ministry, on Price Deficit Financing Scheme.

REPORT OF THE JHA COMMITTEE ON FOODGRAIN PRICES FOR 1964-65 SEASON

Department of Agriculture Ministry of Food and Agriculture Government of India

PART-I DETERMINATION OF PADDY AND RICE PRICES FOR THE 1964-65 SEASON

1. INTRODUCTION

1.1. The Minister of Food and Agriculture appointed on 1st August, 1964, a Committee under the Chairmanship of Shri L. K. Jha, Secretary to the Prime Minister, to advise the Minister of Food and Agriculture on the determination of the prices of rice and wheat for the 1964-65 season. The other members of the Committee were Shri T. P. Singh, Secretary, Planning Commission; Shri B. N. Adarkar Additional Secretary, Department of Economic Affairs, Ministry of Finance; Prof. M. L. Dantwala, Department of Economics, University of Bombay and Shri S. C. Chaudhri, Economic and Statistical Adviser, Ministry of Food and Agriculture. Dr. B. P. Dutta, Deputy Economic and Statistical Adviser, Ministry of Food and Agriculture, was co-opted as Secretary of the Committee. The Committee was asked to advise on:

- (a) the determination of producers' prices in respect of the 1964-65 season, first for rice and then for wheat on an all India basis with such quality-wise and region-wise variations as might be necessary, which are fair and economical and also the reasonable wholesalers' margins, retailers' margins and consumer prices;
- (b) the terms of reference which would be suitable for an agency to provide such advice on a continuous basis in respect of future seasons, the suitable form of such agency, and the kind of personnel it should have; and
- (c) the best manner in which the work of such an agency could be fitted in with arrangements being made for advice on policy in regard to wages, incomes and savings.

Later, the Committee was also asked to suggest prices of coarse food grains for the 1964-65 season.

(1.2 - 1.6 not included here)

1.7. Before formulating our recommendations, we should like to state our understanding of the trends in the economy which have to be taken into account in evolving a long-term policy. These are:

- (a) The demand for food grains, particularly rice and wheat, is on the increase from year to year. This is because population is growing and incomes are rising. There is a long-term trend towards increased levels of consumption as well as substitution of coarse grains like maize, jowar, etc., by wheat and rice. Domestic production, on the other hand, has not been rising as fast as the population during recent years, and the country's capacity to pay for imports is severely limited. In the circumstances, shortages even of a marginal nature, are likely to persist and there is likely to be a steady upward trend in price levels to bring demand and supply into balance.
- (b) The upward trend in prices, although a matter of concern to consumers, can play a helpful role if it has the effect of stimulating domestic production of food grains. This stimulus can come about, firstly, by arresting the trend to switch over from food crops to cash crops to cash crops which has been at work for some years. Secondly, it can encourage the farmer to adopt improved technology and increase his inputs in the production of food, provided the availability of fertilizers, water, better seeds and other facilities is ensured at reasonable prices. At the same time, it has to be remembered that if high prices do not go to the agriculturist but inflate the profits of middlemen, there will be no favourable

impact on production. It is also important that even in the long-term interests of the consumer, the price to the producer should not be lower than what would enable and encourage him to maximise his production.

- (c) In the case of a basic necessity of life like food grains, a relatively small shortage can lead to a sharp increase in prices. Once an upward trend in prices becomes evident, there is a tendency on the part of everyone—consumer, trader and producer—to hold larger stocks. This tends to increase inventory demand and to reduce supplies artificially and leads to a further price increase. In a rising market, hoarding becomes more common. Thus, an upward spiral in prices sets in and a shortage in supply even of a somewhat insignificant nature can cause a major upsurge in prices. There is reason to believe that something of this nature has taken place in the economy since about the middle of 1964. If imports on a large scale were possible to meet shortages, either due to production being inadequate or due to hoarding, the tendency could have been checked. As this is not possible, it seems clearly desirable that such measures of control over the distributive trade should be introduced as would prevent stocks being withheld in anticipation of a price rise or with a view to forcing a price rise. At the same time, the trade should be enabled to discharge its legitimate functions which include carrying stocks from harvest to harvest, and the return to it—whether the operation is undertaken by the State, by private agencies, or by both—should be adequate for this task to be fulfilled.
- (d) Once prices assume a marked upward trend, uncoordinated attempts, at varying

levels of authority, Centre, State and District, at reconciling the conflicting claims of producers, consumers and traders, lead to the imposition of restrictions or other impediments to the free movement of food grains resulting in wide disparities in prices in different parts of the country. Such distortion of the price structure can be effectively remedied only by action on the national level. There seems to be a clear need for a machinery to be established to ensure an even flow of supplies from the producer to the consumer and from the surplus to the deficit areas. It should aim at having at its disposal sufficient stocks to ever come temporary shortages and to meet essential needs. Elimination of zonal or inter State movement restrictions, which is a *sine qua non* of an integrated price structure, will be feasible only if arrangements exist for a continuous watch over movements and for timely interventions by Government to ensure that such movements are neither excessive nor deficient.

- (e) In so far as available supplies are less than the consumer demand, a part of the demand must remain unsatisfied. If demand is not controlled, prices rise and the lower income groups cut down their consumption. The alternative to a price rise is some form of rationing so that shortages may be spread more evenly between different areas and groups with varying income levels.

1.8. It is against this background of considerations that we have approached the task before us. We have also felt it desirable not merely to consider what the prices at different levels should be, but also how they should be made effective in operation.

2. PADDY AND RICE PRICES FOR THE 1964-65 SEASON

Producers' Prices

2.1. We have conceived of the producers' price as being a minimum price or a support price at which Government should undertake the responsibility for purchasing any quantities that may be offered at approved assembling points. The assembling points will have to be defined in respect of each State and the responsibility of transport to such points should be that of the farmer. The Government should keep itself ready to make purchases at the minimum prices, whenever necessary, and such purchase operations should not be confined only to rail-head centres but should be undertaken at assembling points even in remote and inaccessible areas, where occasions requiring purchase at support prices are likely to arise the most.

2.2. We have referred earlier to the importance of assuring such a price to the producer as would encourage him to maximise his production. At the same time, we have been unable to go along with the View that a mere increase in producers' prices will serve the objective of maximising production. The increase in production of food grains, which we aim at, has to be achieved primarily by adopting better techniques of cultivation with increase in productivity per acre rather than by diverting land from other crops which may be of greater value to the economy as a whole. Up to a point, higher prices can help in encouraging the adoption of better techniques of food production and greater use of inputs provided the facilities in the shape of fertilizers, water, better seeds, etc., are there and all that the farmer needs is, a better price to make full use of them. Further, the likely effects on the wage-cost structure, the cost of living and the inflationary effects that might follow the fixation of very high producers' prices need also to be kept in view. Apart from these considerations, we have also had to bear in mind

that the appointment of the Committee was made in the context of consumer prices which were generally regarded as being too high for the general levels of income prevalent in the country. We feel that the optimum relationship between agricultural prices and the general price level, the relative prices of substitutable crops, as well as the impact of agricultural price policy on the economy as a whole are long-term issues, which will have to be considered carefully while evolving the agricultural price policy on a more comprehensive basis. We have referred to these questions again in the latter part of our Report while recommending the functions of the Agricultural Prices Commission.

(para 2.3 - 2.6 not included here)

2.7. Before we end our discussion about the paddy prices we feel necessary to make a reference to the possibility that there may be a tendency on the part of some sections of the trade to buy up paddy from the producer in order to hoard it in anticipation of a price rise. We feel that in order to curb such a tendency which would interrupt the smooth flow of rice into the markets for consumption purposes, the Government should not hesitate to requisition paddy stocks from the trade if circumstances warrant it.

Wholesale Prices

2.8. Having suggested minimum prices at reasonable levels for the producer, we now proceed to consider the measures necessary to ensure reasonable prices for the consumer. The paddy which the producer sells is converted into rice by mills located in most of the producing areas. In the process of milling, there are certain losses in terms of weight, partly on account of drilage, but mainly on account of removal of paddy husks, as well as breakages in the process of milling itself. The miller, furthermore, has to recover his actual cost of processing and to get a reasonable return on his capital. The rice after milling has to be bagged and sewn before it is ready for dispatch.

In some States, the millers themselves buy the paddy and convert it into rice for sale on their own account. In other States, wholesalers get the paddy and have it converted into rice by millers. The estimates which we have received from the State Governments of the cost of milling do not show any uniformity. This is partly because there are some variations in costs and partly because of the different basis on which costs have been computed by the State Government. We have felt that for the determination of a fair ex-mill price, it is not necessary to establish a particular figure as the cost of milling. In our view it would be best to fix a maximum price at the ex-mill stage which would not only cover the costs for all the operations involved plus a reasonable margin of profit but also leave cushion to absorb variations in producers' prices which are in the nature of a minimum. At the same time, the margin should not be too large as otherwise it will not only raise paddy prices beyond the levels we consider desirable, but also tend to push up consumer prices which we wish to avoid.

2.9. In the past, many States have been procuring or requisitioning rice from the millers at artificially low prices. It was tacitly understood that the millers will compensate themselves for the loss on procurement by raising prices well above costs for the rest of their sales in the open market. We do not consider such an arrangement to be in the best interests of stabilising rice prices on an all-India basis.

(2.10 not included here)

2.11. ... Again, just as we have recommended that if prices tend to fall below the minimum for producers, Government should enter the market to support them, we consider it necessary that to ensure that wholesale prices do not rise above the ceiling, Government should be prepared to requisition stocks.

2.12. Requisitioning apart, we feel that Government or better still the Food Corporation of India, should try to purchase, by negotiation, at prices below the maximum, fairly large quantities of rice soon after the harvest. While the maximum prices which we have recommended should be notified, Government's ability to enforce them particularly in the lean season will depend not so much on detecting and penalising sales at higher prices, as on their command over stocks which can be released into the market when and where necessary. Since the price which will be paid for acquiring stocks from the millers will not be artificially low, Government should have no hesitation in acquiring a fairly high proportion of the rice from millers and wholesalers, the limitations being storage facilities on the one hand and the desirability of ensuring adequate availability for current consumption through trade channels, on the other.

2.13. Another point to emphasize is that Government's power of requisitioning should be used not merely to meet their own requirements of stocks, but also to ensure adequate movement at or below the maximum prices from the surplus to the deficit areas, whether within the State or across the State boundaries.

2.14. These prices should provide for the actual costs of transportation and other levies and incidentals, plus the margin of gross profit which will enable the wholesaler to meet his establishment and other costs. The gross margin to be allowed to the wholesaler should in our view vary from 1 to 2 per cent, the larger wholesalers with a sizable turnover getting less than the smaller wholesalers whose turnover is lower.

Retail Prices

2.15. Neither the wholesale price nor the farmers' price would remain stable without effective control at the consumer level. We feel that there should be maximum retail price, which

will be statutorily fixed price beyond which the retailer will not be allowed to sell to the consumer. We consider a gross margin of 5 to 8 per cent inclusive of all costs and profits over the relevant wholesale price to be adequate for the retailer. The costs borne by the retailer vary as between different places on account of various factors, particularly the size of the town. In larger cities higher margin would be justified than in smaller towns. The State Governments should fix the actual margins for the retailer in different places in the light of the local conditions.

2.16. We have worked out for selected consuming centre illustrative maximum retail prices. However, these prices are more of an illustrative nature and the State Government can in order to allow for variations in local condition and in the source of supply, make necessary adjustments in them. In fixing wholesale and retail prices, the State Governments should not leave any area uncovered. If prices are not fixed for some areas, there might be a tendency for stocks to move to places where prices are not controlled.

3. MEASURES FOR SATISFACTORY IMPLEMENTATION OF PRICE POLICY

3.1. The fixation of Wholesale and retail prices of rice through an important requisite for holding the price line, will not in itself be adequate to keep prices under check. We feel that in order to implement these prices effectively, it is necessary to take a number of other steps, the more important of which we discuss in the following paragraphs:

Introduction of Rationing in Major Cities

3.2. For prices at consumers level to remain within the statutory limit and even more to prevent stocks being cornered by private individuals either to provide for their own consumption or for sale at profit later on, we consider it necessary that gradually in cities with a population of more than one million, rationing should be introduced.

The concept of rationing meets with strong psychological resistance. People are prepared to put up with it in an emergency but not as a long-term measure. The situation we are dealing with is, however, likely to last for a number of years in view of the mounting pressure of demand on food grains prices.

3.3. We feel that, to be popular, the ration shops should not be modeled on the kind of establishments which functioned during the war. The function and purpose of ration shops may be twofold. Firstly, they should ensure supplies at modest prices of coarse rice to meet the requirements of lower income groups. Secondly, for those who can afford to pay better prices for better quality, every opportunity to buy such quality should be provided, subject only to limitations of quantities to be supplied.

Low Price Shops and Fair Price Shops

3.5. In cities which do not come under rationing maximum prices at the retail level can be enforced partly by fixing statutory prices and partly through fair price shops. However, the prices at which the imported and locally procured food grains are distributed through fair price shops are, at present, very much out of tune with the prevailing level of market prices. This leads to several malpractices as well as an uneconomic use of food grains distributed through them. Artificial cheapening of imported food grains also leads to the displacement of interior food grains which is not desirable. It is, therefore, necessary that the prices of indigenous cereals. This should not preclude the setting up of special Low Price Shops where necessary to cater for identifiable low income groups, where food grains would be distributed on the basis of numbered identity cards according to the quotas fixed. Such Low Price Shops would be open only to those persons who earn less than a stipulated monthly income. However, in order to guard against malpractices, the quantities distributed at subsidized price per

head should be limited by quotas which are well within the consumption requirements of an average individual of the income groups concerned.

Acquiring Control over Adequate Stocks

3.6. For the effective implementation of the maximum wholesale and retail prices as well as for fulfilling the commitment of Government to supply adequate food grains to the rationed cities, it is necessary that Government should have adequate stocks. One of the important sources from where Government can acquire stocks is imports of both rice and wheat from abroad. At the same time greater reliance will have to be placed on the purchases made by Government from domestic production, particularly in the case of rice, which is not available in adequate quantities under favourable terms like those of PL 480. Even otherwise, the total availability of rice in the international market is limited. It is, therefore, necessary that Government should acquire adequate quantities out of the 1964-65 rice crop so as to feed not only rationed areas but also to meet the requirements of the low price shops as well as fair price shops and also to build up adequate stocks that may be deployed to make the maximum prices effective. We therefore, feel that till such time as an adequate machinery is set up through which the Government can acquire stocks by open market operations, it will be necessary to continue and even intensify the Government purchases by levy on millers and wholesalers. However, in order to avoid the undesirable effects on the consumers' prices, such purchases by the Government should be made not at artificially depressed prices but at prices which are more realistic and in line with the market conditions.

3.7. We welcome the setting up of the Food Corporation of India. We feel that the Food Corporation should start functioning as early as possible. This will enable Government to

undertake trading operations, through which it can influence the market forces, and thereby minimize the use of statutory controls for enforcing the maximum wholesale and retail prices. ...

Zonal or Inter-State Restrictions on Movement of Food Grains.

3.8. If price differentials between State and State were ideally adjusted, the movement of foodgrains from surplus to deficit States would be just sufficient and neither excessive nor too little. In formulating our recommendations, we have tried, as far as possible, to provide for such an inter-relationship of prices between surplus and deficit areas.

3.9. As a first step a system will have to be devised by which Government will have detailed information regarding all inter-State movement of food grains. This information should be quickly analysed along with the behaviour of prices so as to identify promptly movements unwarranted by the demand and supply position. Further with a view to checking unwarranted movements the inter-State movement should be freely permitted only through licensed traders. Government will also be in a position to influence the inter-State movement with the help of the stocks in its possession. If sufficient stocks are acquired by Government as visualised by us, it would in fact, be a dominant partner in the inter-State movement. If, however, at any time it appears that attempts are being made to misuse the freedom of movement for speculative purposes, Government should be free to impose such restrictions as may be necessary for effective implementation of its price policy. We are of the view that any regulation of inter-State movement that might be considered necessary should be done by the Central Government keeping in view the requirements of both the surplus and deficit States.

[3.10 - 3.12 not included here]

3.13. The overall picture of the prices that we have recommended is that in so far as the grower is concerned, he will be assured of a minimum price of rice which is generally better than the average prices received by him during the post-harvest period in the 1961-62, 1962-63 and 1963-64 seasons. We feel that if this price level is assured to the grower for in longer period, say for 3 to 5 years, it will encourage him to undertake necessary investments conducive to the raising of the productivity of rice lands. In our view, a guaranteed support price is more important than high but uncertain prices. As regards, the consumer, the prices recommended by us would give relief to him from the peculiarly high prices prevailing during August - October 1964 and also reduce the large fluctuations in prices between State and State and month and month.

PART II PRODUCERS' PRICES FOR WHEAT, COARSE GRAINS AND GRAM

(para 1 - 5 not included here)

6. We would like to emphasise the importance of maintaining a proper relationship between the prices of the superior grains and the prices of coarse grains. If the gap between them begins to get narrower, it should be treated as something of a danger signal. If the prices of coarse grains rise above the prices of superior grains, it would be a situation in which the price policy would need to be re-examined.

PART III TERMS OF REFERENCE AND COMPOSITION OF THE AGRICULTURAL PRICES COMMISSION

1. We have been asked to recommend the terms of reference which would be suitable for an agency to provide, on a continuing basis advice on price policy and price structure in future the suitable form of such an agency and the kind of personnel it should have. We have also been asked to give our views regarding the best manner in which the work of such an agency could be fitted

in with arrangements being made for advice on policy in regard to wages, incomes and savings. Our views on the terms of reference and composition of such a long-term agency, i.e., the Agricultural Prices Commission are given in the following paragraphs.

2. for the 1964-65 season, we have been asked to advise on the prices of paddy, rice, wheat, jowar, bajra, maize and gram. Thus, while our terms of reference pertained only to important food grains, we feel that as the Agricultural prices Commission would be advising on a long-term basis, it is necessary that it should be concerned with, the price policy of all important agricultural commodities and not merely food grains. Though food grains constitute the most important item of agricultural production in India, there are many other agricultural commodities which are in short supply and whose production may be expected to respond favourably to positive price policy. Already, in the case of several such commodities e. g., cotton, jute and sugarcane, Government announces prices every year. In the case of some other commodities, e.g., oilseeds, prices are sought to be influenced through other measures. It is desirable that the price policy of all agricultural commodities should come within the purview of the Agricultural Prices commission, so that a balanced and integrated price structure can be evolved and the claims of the competing crops on limited resources can be resolved in the perspective of the overall needs of the economy. To start with the Agricultural prices Commission should be vested with the responsibility of advising on the price policy for important agricultural commodities, like paddy, rice, wheat, jowar, bajra, maize, pulses, sugarcane, oilseeds, cotton and jute. If the question of appropriate price policy in respect of any other agricultural commodity comes up for consideration Government should, in the interests of the integrated price policy, refer the matter to the Agricultural Prices Commission to obtain its views.

3. The Commission will have to keep in view that one of the most important problems facing the national economy is that of augmenting agricultural production in a big way. This could be brought about mainly through the adoption of improved technology and additional investment required for the purpose. To the extent that, the price policy can assist this process, it should be its major objective to do so. However, we should like to mention that while the adoption of improved technology would entail larger expenditure, it does not follow that this would necessarily result in higher cost per unit on output. Generally, it would be reasonable to expect that improved practices and technology would reduce rather than increase per unit cost. However, the possibility of an increase in unit cost cannot be ruled out. Besides, there is the factor of risk and uncertainty involved in the adoption of new technology. The Commission should study and ascertain the current position obtaining in this regard in India. If the Commission is convinced that some measure of monetary incentive would be necessary to induce the cultivator to adopt improved technology, it should consider whether the same should be provided through schemes which would be cost reducing - such as, for example, supply of improved varieties, pesticides, fertilizers, etc., at cheaper rates - or through increase in prices.

4. The aim of the price policy should also be to encourage optimum utilization of land so that the climatic and soil variations in different regions are exploited to the best advantage of the economy. It is necessary to distinguish between productivity - in input output terms - and profitability, which depends upon the additional factor of current relative prices. In an economy like ours, in which price controls operate for some commodities and not for others, profitability of a crop may have no direct relationship with the productivity of the crop or the best use of land. The shift in the cropping pattern due to partial

price controls needs to be avoided. This is an important aspect of the price problem which the Commission will have to study.

5. The Commission will also recommend an appropriate relative price structure among different crops. The main consideration should be to avoid the year to year excessive diversions of land and resources from one crop to another, which are not technically and economically warranted to ensure efficient use of land. For this purpose, it would be necessary to assess the demand and supply conditions of each crop at the beginning of the year and then arrive at the required marginal adjustments in prices so as to achieve as near a balance as possible between the expected supply and demand conditions during the following year.

6. In recommending relative prices for different agricultural commodities the Commission should take into consideration conditions in international markets. In assessing this impact on domestic markets, the possibilities in regard to imports and exports of agricultural commodities become relevant.

7. In view of the fact that agriculture occupies a predominant place in the national economy, the level of agricultural prices has a decisive influence on the general level of prices in the country. While prices have an important role in providing incentive to the farmer for adopting new technology there is a limit beyond which the rise in prices may not be considered desirable from the point of view of the economy as a whole. The Commission should, therefore, keep in view the likely effect of the price policy on the rest of the economy, particularly on the cost of living, level of wages, industrial cost structure, etc. We would like to add that while prices influence the return to the farmer, gross incomes also depend on the volume of production and the net income on the cost of farm operations. Increased efficiency in the use of inputs, such as land water, fertilizers etc. will raise incomes without an increase in

prices. It is a better economic policy to ensure higher incomes through more efficient production, i.e., by raising yields and reducing the unit cost, than through higher prices. It is necessary to ensure that higher prices, which may be recommended for agricultural produce, do not merely result in higher prices of agricultural inputs, either because of the inelasticities of domestic production, or the non-availability of foreign exchange for imports. If higher prices get quickly reflected in higher costs, the incentive effect of the former will disappear, resulting merely in cost inflation.

8. It is necessary to emphasise that the effectiveness of a price policy as an incentive to higher production would depend upon several other factors—some general to the whole economy and other more particular to agriculture. To the first category belong the fiscal and monetary policies, which, though obviously beyond the purview of the Commission, will have intimate bearing both in its recommendation and their implementation. But we feel that the Commission should have the latitude to convey its views to Government in regard to such non-price aspects pertaining to agricultural policy as have a direct impact on agricultural production and hence on agricultural prices.

9. One of the important functions of the Commission should be to see that the benefits of the price policy accrue to the producer on the one hand and the consumer on the other. For this purpose, the Commission will aim at ensuring that marketing services are made available at reasonable cost. In order to achieve this objective, the Commission would look into the present methods and costs of marketing of agricultural commodities in different regions, suggest measures to reduce costs of marketing and recommend fair margins. Since imported food grains constitute an important part of the total availability of food grain in the country, the Commission should recommend the issue prices

for imported food grain also. The Commission should be free to suggest the measures which in its view should be taken to make the price structure recommended by it effective. In this context, the Commission may examine the bearing of the system of procurement, inter-State movement, issue prices of imported food grains, system of fair price shops and rationing, buffer stock operations, etc., on the prices of food grains and suggest possible improvements. The Commission will also have to keep itself in touch with the Food Corporation of India.

10. While making recommendations, the Commission should keep in view financial and fiscal limitations of Government so that the recommendations are not found to be impracticable. It would be a good convention if the recommendations of the Commission having financial and fiscal implications are given separately from other recommendations which do not have such implications. Moreover, in a sensitive field like prices, the Commission should continuously watch the effects of its recommendations as implemented, so that, if necessary, it can make appropriate suggestions to Government for mitigating the stresses and strains that might develop. The determination and implementation of prices is an intricate and complicated exercise, and the expert advice of the Commission on a continuing basis to the Central and State Governments would be highly valuable.

11. For evolving a scientific basis for determining the prices of different agricultural commodities, the Commission would require technical data and results of research studies on a number of items, e.g., prices, costs and margins at different stages of marketing, normal trade patterns, additional costs and benefits from improved techniques, etc. The Commission should review the present arrangements for relevant studies and for the collection of information regarding agricultural prices and other related data and suggest improvements in them.

The Commission may make suitable arrangements through research institutions for, the collection of additional data and the conduct of relevant studies which may be deemed necessary and useful for discharging its functions effectively.

12. As regards the best manner in which the work of the Commission could be fitted in with the arrangements being made for advice on policy in regard to wages, incomes and savings, we have, not been able to formulate any precise delimitation of functions, mainly because the thoughts of the Steering Group for policy in regard to Wages, Incomes and Savings have not yet crystallised. However, the Commission should keep a close liaison with the work of this Steering Group so that the necessary coordination between the agricultural price policy and income policy is achieved. Likewise the Commission should keep in touch with other bodies set up by Government in connection with matters having a bearing on prices and production, e.g., the Food Corporation of India.

13. Taking into account the functions of the Commission as we have envisaged in the preceding paragraphs, we feel that the terms of reference of the Agricultural Prices Commission should be as follows:-

"(1) To advise on the price policy of agricultural crops, particularly paddy, rice, wheat, jowar, bajra, maize, pulses, sugarcane, oilseeds, cotton and jute, with a view to evolving a balanced and integrated price structure and resolving the claims of competing crops on limited resources in the perspective of the overall needs of the economy.

(1.1.) While recommending the price policy and the relative, price structure, the Commission may keep in view the following:

- (i) The need to provide incentive to the producer for adopting improved technology to the widest possible extent and for maximising production;
 - (ii) The need to encourage optimum utilization of land;
 - (iii) The need to achieve as near a balance as possible between the expected supply and demand conditions of different crops
 - (iv) Import and export possibilities;
 - (v) The likely effect of the price policy on the rest of the economy, particularly on the cost of living level of wages industrial cost structure etc.
- (1.2) The commission may also suggest non-price measures to facilitate the achievement of the objectives set out in
- (1) above.
 - (2) To recommend from time to time, in respect of different crops, measures necessary to make the price policy effective.
 - (3) To examine where necessary the prevailing methods and costs of marketing of agricultural commodities in different regions to suggest measures to reduce costs of marketing and to recommend fair margins.
 - (4) To keep under review the developing price situation and to make appropriate recommendations as and when necessary within the framework of the overall price policy.
 - (5) To review the arrangements for relevant studies and for the collection of information regarding agricultural prices and other related data and suggest improvements in the same.
 - (6) To advise on any problem relating to prices and production may be referred to it by Government from time to time.

The commission will maintain close touch with other bodies set up by Government in connection with matters having a bearing on prices and

production such as the Steering Group on Wages Income and Savings Policy and the Food Corporation of India.

14. In order that the Commission is able to carry out the above functions adequately and fully we feel that it should be a continuing body. The Commission should consist of a Chairman and at least four members. It should be an expert body and its members should be selected on the basis of special qualifications. One member should be an economist who has interest in and knowledge of agricultural economic problems. The second member should be a person who has adequate technical background as an agronomist or as a farmer on a substantial scale, or as an officer of the Agriculture Department having a long experience of the problems of agriculture. The third member should be an administrator preferably with a long experience of food and agricultural administration and with adequate knowledge of the field problems, so that he can visualize the practical difficulties involved in the implementation of the recommendations of the Commission. The fourth member should be the Economic and Statistical Adviser to the Ministry of Food and Agriculture, as a large part of the data required by the Commission will have to be obtained from the Directorate of Economics and Statistics under him. The Chairman of Commission should be a reputed person, who will command confidence of all sections of the public, and who is known or fair-mindedness and practical approach. The Commission should have a Secretary, who should be a technical person with adequate knowledge and background of the formulation and working of the agricultural price policy. Though as we have recommended earlier, the commission should be established on a continuing basis, we

have not been able to form any judgment as to how many of its members should be on a whole time basis. The Chairman and Secretary should, anyhow, be appointed on a whole-time basis. It could be considered, in the light of the work-load, whether some other members should also be appointed on a whole-time basis. The Commission should be set up, to begin with under a Resolution of the Government of India in the Ministry of food and Agriculture with effect from 1st January, 1965 with a separate budget-head. The question whether the Commission should be made a statutory body may be examined later in the light of its actual working for a year or so.

15. While the Commission should use the relevant data collected in the Directorate of Economics and Statistics, Ministry of Food and Agriculture it should also have an appropriate secretariat of its own which would enable it to discharge its functions effectively. The secretariat should have on its staff, such technical persons as would be able to undertake such analytical studies from time to time as may be required by the Commission in the course of its working. It should have an administrative wing as well. As already mentioned earlier in para 11, for field studies, surveys, etc. the Commission will depend on other agencies and research bodies engaged on such work.

L.K. Jha
T. Singh
B.N. Adarkar
M.L. Dantwala
S.C. Chaudhri

24th December, 1964.

EXTRACT FROM S.R. SEN COMMITTEE REPORT ON COST OF CULTIVATION

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SECTION I.

INTRODUCTION

1.1 The Special Expert Committee on Cost of Production Estimates was constituted on the 30th January 1979 by a Resolution of the Government of India "for reviewing methodology, procedures and other related matters concerning of production estimates". The composition of the Committee is as under:

- | | | |
|----|---|----------|
| 1. | Dr. S.R. Sen | Chairman |
| | Chairman,
International Food Policy
Research Institute and
Former Executive Director,
International Bank for
Reconstruction and Development. | |

- | | | |
|----|--|-----------|
| 2. | Dr. C.H. Hanumantha Rao
Director,
Institute of Economic Growth,
Delhi University. | Member |
| 3. | Dr. Daroga Singh,
Director,
Indian Agricultural Statistics
Research Institute | Member |
| | Dr. S.P. Pant
Economist,
Directorate of Economics and Statistics | Secretary |

1.2 The term of reference of the Special Expert Committee, as given in the Resolution of the Government of India, are as follows:-

- i) to examine the design, content and methodology adopted in regard to generation of cost of production estimates under the comprehensive Scheme for Studying the Cost of Cultivation/ Production of various crops;
- ii) to examine the present arrangements for the collection of data at the field level and its scrutiny and processing for generating cost of production estimates at the Central level;
- iii) to suggest methods of curtailing delays in the availability of cost of production estimates for various crops;
- iv) to examine the question of extending the coverage of cost of production studies in terms of crops/ varieties and States; and
- v) to suggest methods of working out a comparable series of input prices on the basis of available data collected for cost of production studies;

and to make recommendations.

SECTION IV

METHODOLOGICAL ISSUES

Introduction

4.1 The cost concepts followed under the comprehensive scheme for studying the cost of cultivation of principal crops are broadly the same as were evolved for the farm management surveys after a prolonged professional discussion and consensus arrived at in the Fifties. Since then the nature of farm business and the farm cost structure have undergone a substantial change. A review of cost concepts and the costing procedures may now, therefore, be in order.

4.2 The costing procedure followed and its criticism advanced in different fora have been outlined in Section II. This Section deals with them item-by-item and evaluates the available alternatives.

Treatment of direct costs

4.3 Some of the costs incurred in farming are direct costs. These include, besides cost on material inputs like seed, fertilizer, manure, insecticide and pesticide, canal and tube well charges, depreciation and minor repairs, cost on hired human labour and bullock and machine labour (both owned and hired), rent for leased-in land, land revenue, cesses and other taxes and

other miscellaneous expenses.

4.4 While there is almost an unanimity that direct expenses should be charged at the paid-out cost a view has sometimes been expressed that some of the direct cost items like the hired human labour and rent paid out should be charged at the administered rates.

Hired human labour cost

4.5 Hired human labour is of two types:(a) attached labour, and (b) casual labour, Attached labour is employed on a long term basis and the casual labour is employed for only specific jobs as and when needed.

4.6 Being a direct cost item, the practice so far, including the one followed in the scheme, has been to evaluate hired human labour at the actual paid out costs, including perquisites, for their services.

4.7 The legislative measures on hired labour at statutory rates carry a welfare motive, In some cases, payment of wages below the statutory rates may even be banned so as to enforce the legal provisions. Yet, the question relevant to costing principle is: can any direct cost item be justifiably put at a rate higher or lower than the actual paid-out rate?

4.8 A perusal of the wage data collected under the scheme shows that the actual wages vary over time and between States. Even within the same cluster, they vary greatly for different operations. The wage rate for casual labour exceeds the statutory wage rate in some States like Punjab and Kerala. In most States, the difference between the actual wage rate and the statutory rate has narrowed down.

4.9 Unless the enhanced wage rate actually reaches the targeted beneficiary, costing on the basis of the statutory wage rate may imply a

squeeze on the labour force as they may also have to pay more for the products purchased whose costs, and therefore prices, are likely to go up, At the same time, the employer, by paying the same old wage to the labour, would earn extra profit.

4.10 The Committee is of the view that the costing mechanism is not the proper tool to implement the intended welfare policy and suggests that hired human labour - attached or casual - be charged at the actual paid-out cost.

Rent actually paid, land revenue cesses, etc.

4.11 Rent actually paid for leased-in land and land revenue, cesses and taxes are also direct costs. These items too have to be treated in the same manner as other direct costs.

Imputed Costs

4.12 One typical characteristics of agriculture, that distinguishes it from manufacturing industry, is that farming is carried out on farms which are business units and household units at one and the same time A large proportion of the inputs used in production are internally supplied by the farm family. Hence, some of the factor payments constitute cost as well as income. The opportunity cost of these internally supplied factors and services may or may not be equal to their market cost.

Family labour cost

4.13 One such item is the family labour charges. So far, family labour used in production has been charged at the going wage rate for the attached labour in the selected holdings. The practice of hiring attached labour, as evident from the data collected under the comprehensive Scheme, is quite common and wage rates for attached farm labour can be objectively estimated.

4.14 The procedure has, however, been objected to on the ground that the attached labour wage rates are lower than that of the casual labour for reasons of security, of employment. Hence, it is argued, evaluating family labour on the basis of attached labour rates undervalues the family labour.

4.15 Imperfections in the rural labour market are well documented. But there is little evidence to establish that these imperfections govern the attached labour any differently than the entire agricultural labour force. Even if the contention be accepted, it needs to be established that the weighted average wage rate of casual labour is higher than the average rate of the attached labour.

4.16 The wage rates for the casual labour vary from operation to operation. They are highest during the peak season. But the peak season lasts only a few days. Then there are unemployed days as well.

4.17 A view has been expressed that accounting for the zero wage rate days, the weighted average wage rate of the casual labour may, in fact, be lower than the average rate of the attached labour.

4.18 For reasons of similarity in the nature and extent of work and working conditions between the attached farm labour and the family labour, the Committee suggests that the cost of family labour may continue, as at present, to be imputed at the wage rate of the attached farm labour wherever sufficient and reliable data for the latter are available. In other cases, cost of family labour may be imputed on the basis of the wage rate for casual labour obtaining during the period of operation. Whenever the family labour does any skilled job, like a tractor driver, the ruling wage of the latter may be taken into account but only for the hours or days for which such skilled work is undertaken. There is, however, a suggestion that labour of any member of the family, whose main occupation is declared as other than farming

may also be costed as casual labour. This may be done if the difficulties about field data collection can be overcome.

Interest on fixed capital

4.19 With the adoption of modern technology the proportion of fixed capital (excluding land) in the total 'farm Investment has been increasing. For a prosperous agriculture, this healthy trend needs to be encouraged. Whether asset accumulation occurs through loans or from farm business savings, the interest as an item of cost must be objectively assessed.

4.20 Although the proportion of institutional credit in the total supply of rural credit has been increasing, the non-institutional credit, available at a much higher rate, still constitutes a sizeable proportion of the total supply. To the extent this situation persists, the debenture rate, as used in the present scheme may be an underestimate. The alternative to the debenture rate seems to be a weighted average interest from various sources institutional non-institutional, obtained from the survey data itself. The Committee is of the view that the latter method, viz, a weighted average interest rate, will be more appropriate for estimating interest on fixed capital. It suggests that for this purpose the weighting diagram should be based on source-wise loans taken by the sample cultivators. The weighting diagram could be revised every, five years or so.

Interest on working capital

4.21 The Committee suggests that a similar exercise may be undertaken to estimate the interest on working capital by taking a weighted average rate based on the short term loans taken by the sample cultivators.

4.22 The existing practice to charge interest on working capital for half the period of the crop is also questioned. This practice is based on the

assumption that the working capital expenditure is evenly spread between the sowing and harvesting periods of the crops. The critics assert that under the new technology, the major working capital expenses are on seed and fertilizer, both of which are contracted or expended at the sowing time or before. The harvesting and threshing expenses incurred at the end of the crop period, if held, are not equal to the initial expenses.

4.23 The difficulty arises because part of the expenses classified as working capital may be loan financed and contracted at the beginning of the crop and the rest are farm supplied at various periods.

4.24 The Committee is of the view that interest on working capital items actually paid out should be fully, accounted for, it, therefore, recommends that a weighted average period, taking value of inputs used as weights, be computed from the survey data for each crop separately and interest be charged accordingly. A simplification may be to undertake the exercise for each area and for the principal crop separately on the basis of which suitable norms with respect to time period for charging interest may be developed and used. The exercise may be repeated every five years or so and in base of significant changes the period may be suitably altered.

Rental - value of owned land

4.25 Rental value of owned land is probably the most disputed item of cost in economic literature. It is generally agreed that rent represents an inescapable fixed cost to be realised in the long run. However, the cost accountants began treating rent actually paid from the proceeds of the crop produced on rented-in land as cost even in the short run for the tenants. Once this began to be done, the same procedure was advocated for the owned land.

4.26 In the present series of cost studies, the actual contract rent paid is treated as cost and is charged in full for the area rented-in. (Cost A2 is the direct cost for the tenant farmers). For the other operators a rental value equivalent to the prevailing rents in the area is computed. The charge so computed is subject to the ceiling of 'fair rent' as fixed in the State legislation. The latter is determined as a fixed proportion of output evaluated at the harvest price.

4.27 A number of alternative procedures to compute rental value for owned land have been suggested:

- (a) in appropriate rate of interest on the value of land,
- (b) Market rent,
- (c) 'fair rent' as defined in the State legislation, and
- (d) a fixed proportion of output valued at harvest price as per national plan.

4.28 Each one of these procedures has its own merits and demerits. On the face of it, procedure (a) looks simple. But this is the most difficult procedure in practice. There is little difficulty with respect to the choice of interest. The real problem lies in the objective determination of the economic value of land.

4.29 In a highly stratified and densely populated country, ownership of land offers the best form of security. Transactions in land are few and between. The few transactions that do take place are usually for small parcels of land. The buyer, for reasons of convenience, prestige or other non-economic reasons can often afford fancy price.

4.30 This apart, land values are always sensitive to product prices, government price support and urban development. Under conditions of inflation and/or rapid expansion of new technology, the speculative element pushes land values to unreal levels.

4.31 Imperfections of the rural land market, and the high content of speculative and non-economic elements in the few sales of land that are actually recorded and errors in mutations make it difficult to assess the economic value of land. For these reasons, State legislation provides special price fixation for land acquisition for public purposes. For the computation of rental rate, the acquisition price would, however, be not only cumbersome but also disputable.

4.32 Cash rental rate and share rent are probably better indicators of demand and supply position of the agricultural land in the rural areas. Generally speaking, the market rents are related to productivity and the higher the productivity and more the improvements made in land, higher is the rent. However, use of these procedures is also not without problems. In the first instance, renting-out is prohibited by law in some States (except for specified categories of owners); secondly, even the States which have no such land laws, the incidence of leasing-in and leasing-out is not very common. According to 1971 Agricultural Census, 91.5 per cent of the holdings, accounting for 91.1 per cent of the cultivated area, were owner operated. Cost studies conducted under the scheme also confirm that the incidence of renting varies greatly from State to State. This apart, the proportion of input cost shared by the land-lord is not known with any degree of accuracy.

4.33 In States where leasing accounts for a very small proportion of total cultivated area say less than 5 per cent, it may be difficult to find enough cases among the sample cultivators reflecting the true market rent for various classes of land. The difficulty of arriving at net share renting practices followed in different parts of the country and the problem of computing net land rent.

4.34 Fair rent as defined in the State legislation is another alternative often advocated to determine the rental value of owned land. The

advantages claimed for it are simplicity in computation, definitiveness in nature and socially acknowledged desirability. These fair rents have generally been defined in terms of some proportion of output that landlord can justifiably claim from his tenant for use of his land. It is net all facilities, i.e., it is the reward for factor land only. The proportion of produce fixed however varies from State to State, and in some cases, it varies between irrigated and dry land or even between small and large farmers.

4.35 The uniform rental rates based on fixed proportion of output deemed to be desirable from the point of view of comparability of reward to the land factor can be a basis for the imputation of rental value of owned land. The method however has the disadvantage that the same parcel of land put under different crops will yield different rental value. Also, the rental value of the same parcel of land will be different in different years. This apart, the variations in the fixed proportions between States, ranging from a low of 1/8th to a high of 2/5th of the produce as net rent, will result in large variation in the unit cost of production for the same crop, since rent of owned land forms a major proportion of the total cost.

4.36 In this connection, the Committee notes that a national policy on regulation of rents had been already laid down in the Third and the Fourth Five Year Plans and reiterated in the Draft Five Year Plan 1978-83.

4.37 The Draft Five Year Plan 1978-83 states that the States where the rent exceeds the limit accepted at the national level, i.e., 1/5th to 1/4th of the gross produce should scale down the rent through legislation.

4.38 All imputational methods are open to criticism. The Committee has considered the various alternative in this regard. It is of the view that the practice followed in the earlier farm management studies, viz., imputing the rents of

owned land on the basis of market rents, is the most appropriate procedure. It suggests that in cases where the renting-in is not very common actual rents paid by other cultivators in the village may also be taken into account and, if necessary the schedules may be suitably modified to collect this information. In cases where this is not adequate, a five year average of the actual rents could be taken for this purpose.

4.39 The Committee agrees that the national policy is a composite mix of all relevant measures. Difference between the actual and socially desired rates on any item will exist. Even so, the Committee considers the proposed alternative as the most expedient under existing conditions.

Management as an item of cost of production

4.40 Under the present costing procedures, supervision and management, unless hired, are not treated as cost. This procedure is based on the farm management studies conducted earlier wherein management was treated as the residual claimant.

4.41 Lately, the scheme has come under criticism for excluding management from the cost of Production. The critics hold that management is an essential input of modern farming. Successful farm operators are said to spend more time in organising timely supplies of off-farm inputs and selling their products than those who rely primarily on traditional inputs and the traditional market channels. The extra effort, and expenses involved, it is argued, should be accounted for.

4.42 The opposite view does not refute the principle of extra reward going with extra effort. The dispute relates to the treatment of management as a cost item. Since management leads to efficiency, and higher output, it is argued that it is fully paid for in terms of additional output.

4.43 It is true that management is a qualitative attribute and for that reason is not amenable to direct measurement. Efforts to quantify management via proxy variables, for purposes of analysis, have not yielded satisfactory results. The problem arises because output of a farm depends on the aggregate mix of inputs, including management. While the output attributable to physical inputs can be isolated, the output attributable to management cannot. This is so because management works through other physical inputs. It is observable in the quantity and quality of physical inputs, timeliness of their application and the choice of the output mix. Identifiability is thus a major difficulty.

4.44 Lack of identifiability creates problems of measureability. It is true that even the smallest of farmer has to perform the role of a manager. However, the managerial skill at the lowest level may be indistinguishable from that of a labourer. At the other extreme, we do find farmers possessing high degree of managerial skill. A continuum of managerial skill among farmers in the population can thus be visualised. The range may be from low managerial skill, resembling labourer, to a highly developed level, resembling a professional manager.

4.45 From the above discussion it is clear that although, in theory, the managerial function is distinguishable from the entrepreneurial function yet it is the quantification of management input and lack of acceptable measure of reward that presents difficulties. It was for this reason that management was, in the past treated to be rewarded in profit along with the entrepreneurial function.

4.46 The Committee agrees that wherever a hired manager is employed, payment to him should be treated as cost. But hired management being an exception, rather than a general practice,

it is not possible to use such camas to measure the opportunity cost of management of farmers in general.

4.47 It is sometime suggested that some fixed percentage of cost be treated as management charge. The practice of charging over-head costs as a percentage of total cost in the manufacturing industries is given as an analogy. The analogy is however not tenable. In the manufacturing industries, management is generally hired and hence is a paid-out cost. Where it is not hired, it is possible to ascertain its opportunity cost with a fair degree of accuracy. Secondly, there is no imputed rental value in the manufacturing industries and thirdly, the resource ownership position in the manufacturing industry does not involve the same degree of plasticity during periods of falling prices as is experienced in agriculture.

4.48 For reasons given above, the Committee does not favour any arbitrary percentage cost on account of managerial functions.

4.49 The Committee feels that under the Indian conditions certain management functions be regarded as paid in profit along with entrepreneurship and the pricing authority may keep this fact in mind while fixing procurement prices.

4.50 A point has been raised that one aspect of management involves time and expenditure. A farmer-manager, in arranging supplies of purchased inputs such as fertilisers, hired labour, power and/or diesel as well as new variety seed, has to spend his own time and sometimes incur expenditure also. It is possible that under conditions falling prices and zero profit this expenditure and labour may remain uncovered.

4.51 The Committee holds that any expenditure incurred in the production process that is identifiable and measureable should be treated as cost. The labour and out-of-pocket expenses actually

incurred in discharging the genuine managerial function is no exception. The real difficulty is to isolate such expense and to find out a method of allocating the same between different farm enterprises.

4.52 Some information on functions other than actual labour on farm done by the farmer and his family is already being collected in the survey. The proforma can be modified so as to give the necessary break-down of time spent and expenses incurred on supervisory /managerial functions. The time disposition and actual expenses on supervision/ managerial function on the whole farm can, therefore, be estimated. Evaluating the time spent at the family labour rate and adding the actual expenses will approximate the total expenses on managerial functions. All paid-out costs, comprising Cost A₁ (as in para 4.85), are also known. A factor, K, as a ratio of managerial expenses to Cost A₁ pertaining to all farm enterprises applied to cost A₁ of each enterprise allocates the total Managerial expenses.

4.53 There is a distinct advantage in allocating managerial costs in proportion to Cost A₁ rather than Cost C (as in para 4.52). Cost A₁ is free from imputation and varies directly in proportion to purchased inputs including hired labour. The managerial expenses pertaining to arrangement of supplies of inputs, etc., are thus taken into account. This method will also take into account the size effect on management since the larger the farm acreage the larger will be the purchased inputs and hence larger the management charge.

Risk and uncertainty

4.54 It has been suggested that a suitable allowance may be added to the total cost to provide for the risk and uncertainty faced by the farmer.

4.55 The logic is as follows: Increased agricultural output is now possible by the adoption of modern technology. This involves substantial

Initial investment besides an increasing proportion of cash expenses on off-farm input. This apart, the farmer is faced with the weather-induced yield fluctuations as well as the price fluctuations. Both of these further enhance the risk of the farmers. It is therefore, argued that to ensure increased output through increased investment, some inducement needs to be given to the farmer for undertaking the risks of his business.

4.56 However, from the point of view of costing, what needs to be considered is whether risk is an item of cost and consequently a determinant of price of product.

4.57 Economic theory treats risk bearing as an entrepreneurial function which is rewarded in profit. And profit is not part of cost but is the differential between price and cost. Profit does not determine price but is determined by price. Thus, the inclusion of arbitrarily determined profit in the cost estimate has no validity in terms of economic principles.

4.58 The main force of the argument to provide for risk coverage lies in its role as an incentive for investment. This objective can be realised more effectively through insurance schemes either to cover asset loss or yield risk. In the event of such insurance being contracted, the actual paid-out premium is a cost item and should be so treated.

4.59 As for the prices or business risk, support prices themselves provide insurance against sharp fall in prices. With the threat of bankruptcy eliminated through the minimum support price, fixed at an appropriate level, the price risk may be assumed to have been covered.

4.60 The Committee recommends that no allowance may be added to the total cost on account of risk and uncertainty as these are supposed to be covered by profit.

Allocation of joint costs

4.61 The problem of allocating joint costs between individual crop enterprises has been posed before the Committee. Joint costs comprise of interest and depreciation on such diverse items like bullocks, farm implements and machinery and farm buildings as well as rent, land revenue, cesses and taxes.

4.62 The basic principle generally accepted is to allocate these costs on the basis of use. Thus, interest and depreciation of crop-specific fixed capital items should be charged to the concerned crop and, where two or more crops are involved, the allocation should be done in proportion to the use of the equipment.

4.63 There should be no difficulty in determining the use-time. For bullock drawn implements, the number of hours of bullock labour give a good basis. For others, human labour hours can serve the purpose.

4.64 Depreciation and interest on the value of bullocks can be conveniently allocated between different crops on the basis of their use on the crop concerned.

4.65 The allocation of depreciation and interest on farm buildings such as cattle-shed, tractor shed, etc., pose no problem as they have identifiable uses. However, farm buildings used as implements shed, or for storage of fertilizers and other similar inputs may pose the problem of allocation based on use. The Committee is of the view that, in general, the allocation should be on the basis of use. The final costs are not likely to be affected significantly even if estimation of use-time contains some margin of error. However, if it is not possible to determine the use-time, for that part only, the cost may be allocated on the basis of value of gross produce.

4.66 Where rents are not specified for each crop, the allocation of rent and rental value should be done in proportion to the value of gross output of each crop to the value of the total gross output of all the crops raised.

Crop mixtures

4.67 A much more difficult problem of apportionment of costs between different crops arises in the case of crops grown as mixed crops. In this case, costs are of two types: (a) joint costs - such as irrigation, fertilizer, etc., and (b) crop - specific costs - such as seed and human, bullock and machine labour for harvesting and threshing, etc.

4.68 There is no problem in the case of crop-specific costs. But the costs common to both the crops cannot be easily allocated to the individual crops.

4.69 The methods of apportionment of common costs used are: on the basis of (a) area under the crop and (b) the Proportion of total value of gross output contributed by the individual crop grown in the mixture.

4.70 Using area as the basis poses the additional problem of determination of area under each crop separately. The practice of determining this area on the basis of the 'normal' seed rates in the locality commands little validity these days. Furthermore, in some cases, the seed rates may not appropriately reflect the proportion of area under the crops mixed.

4.71 This problem gets further complicated when different crops are raised at different time periods on the same parcel of land. The short duration crop (a) uses the land for a shorter duration while the main crop uses it for the whole season.

4.72 In order to avoid these complications, method (b) appears to be more rational. The Committee, therefore, is of the view that in case of Mixed crops, while the identifiable direct costs should be charged to the concerned crop, the joint costs may be apportioned between them on the basis of the proportionate contribution to the aggregate value of gross output made by each of the mixed crops.

Apportionment of costs between the main product and the by-product

4.73 For the apportionment of total cost of cultivation between the main product and the by-product, the residual method is being followed at present. The by-product is valued at market price at the harvest time. The amount is treated as receipt and is, therefore, deducted from the total cost of cultivation per hectare. The net cost so derived is divided by the total quantity of main product to obtain cost of production per quintal of the main product.

4.74 The problem with this method is that the imputed market value of the by-products is taken as its cost of production which may not be true. At times of scarcity of the by-products, their prices are unduly high and consequently most of the cost of cultivation gets apportioned to the by-product. The cost of production of the main product, therefore, gets deflated. In extreme cases the unit cost of production of the main product may even become negative. The method thus fails to reflect the real world situation.

4.75 The alternative method is what is known as the proportionate method. Under this method, the allocation of cost of cultivation between the main product and the by-product is done on the basis of percentage receipts from the sale values of the two products.

4.76 The Committee considered the pros and cons of the two methods and recommends that the proportionate method of allocation of costs be followed in future.

Transport and marketing charges

4.77 At present, transportation charges to the nearest market and marketing costs are not treated as part of cost of production. It has been suggested that since the producer participates in the selling process, the expenses incurred by him on this account should be considered to belong to the production process itself and, therefore, included in the cost of production.

4.78 The Committee does not agree with this view. It considers these charges as part of the distribution costs. Transport costs are, however, relevant to decisions regarding support and procurement prices if government purchases are made outside the village. The Committee is of the opinion that the Agricultural Prices Commission should keep these costs in view while recommending price policy to the Government.

Prices used for evaluating farm products

4.79 The Committee agrees with the existing practice of evaluating farm produce at the post-harvest prices prevailing, in the villages or the nearest market (adjusted for transport/marketing charges).

Alternative cost estimates

4.80 The Committee does not favour divorcing reality from the existing principles followed. It feels, however that there may be some advantage in deriving alternative cost estimates based on statutory provisions. State legislative measures reflect social welfare criteria as visualized by the society. These measures relate to wages, rent and interest. Each one of them affects different social groups differently. The overall impact of these measures affects all groups. It, therefore suggests that alternative estimate of cost of production

based on statutory provisions, with respect to whatsoever item they may relate to, such as wages, rent and interest, be computed for analytical purposes along with the estimate based on actuals.

Cost-concepts

4.81 The Committee has examined the various cost concepts used in the farm management and other recent cost studies. These studies generally define four different types of costs as under:

- Cost A₁ All actual expenses in cash and kind incurred in production by owner operators.
- Cost A₂ Cost A₁ + rent paid for leased-in land
- Cost B Cost A₂ + rental value of owned land (net of land revenue) and interest on owned fixed capital, excluding land.
- Cost C Cost B + imputed value of family labour.

4.82 The rationale behind this classification is to distinguish actual expenses incurred by the owner operator and a tenant farmer from imputed costs which are retained by the farmer. Imputed costs comprise three groups of items (i) rental value of owned land, (ii) interest on owned fixed capital excluding land, and (iii) value of family labour. Groups (i) and (ii) are in the nature of interest on owned assets while group (iii) comprises reward for family labour. All these items constitute disposable income of the farm family.

4.83 The new technology in agriculture has changed the agricultural panorama in the country. Personal cultivation has increased replacing tenant farming to a large extent. Leasing-in seems to account for as low as 3 per cent in some States. At the same time, the cost structure has undergone considerable change. All these changes call for a re-thinking on the classification of costs adopted in the past.

4.84 The new post classification should retain the distinctive features of paid-out costs and imputed costs with the required break-up designed to compute various farm efficiency criteria. In addition, in the present context of cost of production providing guidance to price policy, it must distinguish between constituents that are price determining from those that are price determined. This is necessary for clearer understanding of the likely impact of the phenomenon of "plasticity" operating in farming whereby the farmers as owners of resources continue to produce at the same level, or even exceed it so as to maintain their conventional level of income in periods of falling product prices and to take appropriate pricing decisions. Furthermore, the cost classification must group cost items in such a manner that the different types of users, including farmers, find the specific information they need.

4.85 Keeping these requirements in mind, the Committee recommends that the following classification of costs be adopted.

- Cost A_1 All actual expenses in cash and kind incurred in production by owner operators.
- Cost A_2 Cost A_1 + rent paid for leased-in land
- Cost B_1 Cost A_1 + interest on value of owned capital assets (excluding land),
- Cost B_2 Cost B_1 + rental value of owned land (net of land revenue) and rent paid for lease-in land,
- Cost C_1 Cost B_1 + imputed value of family labour.
- Cost C_2 Cost B_2 + imputed value of family labour

4.86 Costs A_1 , B_1 , and C_1 are free from the land rent/rental elements while A_2 gives paid-out costs including rent for land leased-in and B_2 , in addition, includes imputed rental value of owned land. Adding the imputed value of family labour to Cost B_2 gives total cost at the farm. The

classification is therefore, more meaningful from an analytical stand point and more useful from a practical one.

4.87 This classification permits computation of all the farm efficiency criteria usually derived so far. In addition, it enables computation of returns to land factor which is an improvement over the present system. Another distinct advantage is that the break-up of cost by major components provides a range within which the pricing decisions can be based on informed judgment.

4.88 While all the above costs should be estimated on the basis of actuals in view of the demand that statutory floor and ceilings should be taken into consideration, it may be useful to estimate for analytical purposes, alternative costs, e.g., Cost A_2S , Cost B_2S and Cost C_2S , after subjecting the actuals to such statutory limits regarding wages, rent and interest as may be in force.

SECTION VIII PRESENT AND PROPOSED COVERAGE

Existing position

8.1 The Standing Technical committee on Indices of Input Costs while recommending the comprehensive scheme for studying the cost of cultivation of principal crops grouped the various states of the Indian Union into three broad crop regions, viz., rice, wheat and millet. The grouping of States was done on the basis of the dominant crop. For each State within the region, other crops important for the State economy with all-India significance were also recommended for investigation.

8.2 The suggested coverage by crops was comprehensive and included cereals pulses, oilseeds and other commercial crops, Fruits, plantation crops, potato and spices crops were listed in the States where important. The coverage

by States was no less comprehensive. Costs studies on various crops were proposed to be conducted in all the 17 major States.

8.3 The coverage by crops and States, as it stands today, looks impressive. As many as 22 crops have already been covered under the scheme. However, the Directorate is under pressure to expand the coverage still further.

Data requirements

8.4 Some States which have started raising crops not grown earlier within their territories desire that their States too may be included in the all-India sample, even though the area or output of the crops is still not significant. Wheat in Maharashtra, Gujarat and West Bengal is an instance in point.

8.5 The Agricultural Prices Commission, while fixing support prices by varieties of certain crops, finds little support from the present series of cost studies which are based on the crop as a whole an amalgam of all the varieties. Hence, desire that variety-wise cost estimates be provided to them.

8.6 The Basic Data Committee feels that since the input-output and other data collected under the cost studies are useful for planning various developmental programmes, the coverage may be extended to the various agro-climatic zones within the States.

8.7 Demand have also been made by the Planning Commission and other organizations for representative estimates of input absorption and labour participation rates by size-classes for sub-categories of farms such as irrigated/unirrigated tractor/ bullock operated farms etc. With the current emphasis on evolving suitable technology-mix for different farming systems

such as crop-livestock, crop-sericulture etc., the demand for data on subsidiary enterprises too may crop up in the near future.

8.8 The scheme is thus faced with a pressing demand for data on the various aspects of the diverse farming systems in the country. Further, all the data users want that the data should not only satisfy the necessary condition of representativeness but should also be adequate to permit rigorous analysis.

8.9 The need for research data for diagnostic studies has been increasing. The panorama of Indian agriculture has undergone a significant change. The developmental process has thrown up new and more challenging research and policy problems. The data users' base too has been greatly expanded. But there has not been any all-India research effort in farm economics commensurate to the needs of the time. In the absence of other sources, the burden for generating the cross-section and time-series data about the agricultural economy of the country in general, and input and cost of cultivation in particular, has fallen on the cost of cultivation scheme.

8.10 However, as pointed out elsewhere, the present coverage has been made possible by curtailing the sample size of crops to an extent that the representativeness of the samples, in at least some cases, is not beyond doubt. Any further extension of coverage or additions of crops within the present arrangements is not possible without diluting the statistical validity of estimates.

8.11 The Committee is of the opinion that the cost of cultivation scheme can meet much of the demand for data made on it by various organisations. It has not been able to do so in the past because of some technical and administrative considerations discussed elsewhere in the report. The Committee has, therefore, suggested a

modification of the scheme and a more responsible and responsive arrangement between the Directorate and the implementing agencies. It is hoped that the package of suggestions, if implemented, will provide the needed data for planning and research and help rejuvenate the healthy environment of meaningful cooperation between the policy makers and the scientific community in the country.

Crop-Complex

8.12 A word of caution, however, is in order. The cost of cultivation scheme has been designed for a specific purpose. The statistical design and the orientation of the staff has a predetermined focus. Thus, even with the proposed modifications, there will still be need for supplementary surveys on specific problems of special crops which may also need their own sampling designs.

8.13 It may be pointed out that as long as the crop coverage is restricted to a few crops, only a single crop approach for sampling design is possible. But when the number of crops required to be studied increase, as is now desired, then the crop approach and the area approach for sampling are no longer different. Recognising the problem at extending the crop coverage, the Committee has suggested a new sampling design based on crop complexes obtained in the various States (Section III). This design will provide cost data on the crops grown in each crop-complex.

8.14 It is, however, quite likely that the sample size may be found to be inadequate for certain special crops raised in limited areas in some States. The Committee is of the view that for such crops additional villages/clusters may be provided. It is suggested that suitable analytical methods be developed to pool the information collected in the general survey and the additional villages/clusters selected for such special crops.

Variety coverage

8.15 As for the cost estimates by varieties, it would be desirable to use the term 'variety' in the context of cost in a meaningful manner. A varietal difference may exist, say, between two strains of high yielding dwarf wheat. The same may hold between one local paddy and the other of the same type though known by a different name in the different areas. These differences have little significance, if any, to cost-price relationships. Hence, the rational distinction should be based on either (a) the package of technological inputs or (b) market differentiation.

8.16 Defining varieties on the basis of the above criteria, hybrid jowar or bajra are different varieties as compared to the local or even the improved varieties of the respective crops. Similarly, market differentiates between short and long staple cotton. It is suggested that wherever a clear distinction exists, the two crop varieties may, on the analogy of two different processes, be treated as two separate crop activities. There should be no difficulty in giving separate cost estimates for such varieties. Where such distinctions do not exist, it will be preferable to generate cost estimates for the general mix only.

8.17 A nation-wide study of crop or a crop-complex has got to be based on a stratified sampling design. Stratification always involves prior knowledge of the strata. But the village records give the area by crops and not by crop varieties. Selection of villages or farmers based on crop-varieties thus becomes difficult. It will, of course, be desirable for the State Revenue Departments to get the village records specify the crop variety. Variety-wise sampling can then be done. Till that is effected, the survey will have to be based on the "Whole crop". If the sample is large enough, as the proposed procedure ensures,

the tabulation and analysis can be done on the basis of varieties to give statistically valid estimates.

Sub-categories

8.18 As for the cost estimates by sub-categories of farms (for example, irrigated/ unirrigated, tractor/bullock operated), the revised sampling design is adequate to give representative estimates at the all-India level. The reliability of such estimates at a more disaggregative level will naturally decrease at the State and the regional levels depending on the specific case that fall in the sample. It is hoped that the results will still be useful for most purposes. Given these limitations the modified scheme should be able to provide basic data on input-absorption rates by sub-categories of farms.

Territorial coverage

8.19 The territorial coverage of the scheme at present extends to 16 states. There is provision to extend the scheme to Jammu and Kashmir also. Arrangements for the Purpose have, however, not yet been finalised. All these States, including Jammu and Kashmir, together account for about 99 per cent of the gross cropped area of the country. This coverage is quite adequate for a number of all-India policy decisions. The territories left uncovered by the scheme present special farm problems which can best be handled by problem or area-specific surveys. The Committee, therefore, does not recommend extension of coverage of the scheme for the present.

SECTION - IX DESIRABILITY OF CONSTRUCTING A PARITY INDEX OF PRICES RECEIVED AND PRICES PAID BY FARMERS

9.1 The demand for index of prices received and prices paid by farmers reflects the desire to ensure equity between farmers and other sections of the society.

9.2 For a variety of reasons, and specially in the wake of a technological break-through in agriculture, the general level of prices of agricultural products may net move in unison with the level of prices of manufactured products. An escalation of prices of manufactured goods leaving farm prices behind for a prolonged period tends to cause concern.

Meaning of parity

9.3 As a moral abstraction, the word parity has an undoubted appeal. However, to make it operative, the abstraction poses the question of what is really fair, for whom and in what context.

9.4 If the policy objective is to protect the relative, well-being of farmers over time, then income parity is the relevant issue and needs to be so recognised. Price parity in this case is merely one of the means to this end. The need to spell out the distinction arises because though there is some parallel between parity price and parity income yet, as will be shown later, the policy measures for the two are not always the same. In this Section, the Committee will be concerned primarily with parity price in the context of the policy objective of parity income. In other words, parity price is not the objective per se but a means to approximate the basic objective of parity income.

Evaluation and use of parity

9.5. The idea of parity In terms of purchasing power of farm products was first used in the United States of America at a time when the prices of agricultural products had dropped considerably in relation to manufactured products. The typical characteristic of "plasticity" of agricultural costs had prevented farmers from reducing production as a means to bring about the required demand - supply balance, unlike in the manufacturing

industry. The impact of this situation on the otherwise prosperous and expanding U.S. agriculture was very adverse.

9.6 The disparity between a rather profitable industry and a crippled agriculture led farmers to demand income parity. A host of new ideas were mooted to overcome the distress. Orderly marketing with provision "loan storage" and "voluntary production control"; artificially maintained high domestic prices with international sale for "what it would bring" together with an equalisation tax to be borne by farmers; cost of production as a basis of price; and parity prices, were advocated.

9.7 The least controversial of these measures were first adopted. Price support operations under orderly marketing without production control were resorted to. But the great depression of the thirties was too devastating for the loan-storage programme to be effective.

9.8 In the meantime, the term 'parity', first coined by the president of a tractor company in 1921, caught the imagination of farmers. The company fearing that the reduced income of farmers would adversely affect their sales of tractors and ploughs popularised the parity concept. The idea was that farmers should get such prices for their products as would keep their purchasing power, in terms of manufactured goods including tractors and tools, as produced by the company, constant over time. The idea became so popular that the Government finally adopted it in the Agricultural Adjustment Act of 1933. Subsequently, the 1938 Act explicitly incorporated the concept of parity income. These Acts provided the legal basis for the Government's price support operations based on the concept of parity.

9.9 Parity has meant different things to different people. Some have interpreted it in terms of income parity. Others are satisfied with parity

in the general terms of trade while still others want to apply it to each single commodity price without regard to output.

Parity ratio

9.10 In the form of parity ratio, the formula is understood to measure the relative well-being of farmers or their relative economic status. But the well-being depends on income which is the product of quantities times prices less costs. The formula measures relative prices, i.e., at best, it reflects changes in purchasing power per unit of output. Since it excludes quantities, relative income movement is not reflected.

9.11 Inter-regional and inter farm disparity is another feature of the problem. Different products are produced in different regions; even the same commodity is produced by different farmers in the same region under different cost conditions. The overall parity ratio affects different regions and different farmers differently.

9.12 The parity ratio tags everything to the base period. It does not take into account technological advances.

9.13 A frequent revision of the base period may provide a partial corrective for technological advance but a fuller corrective would need inclusion of the quantities also.

Price Parity

9.14 The price parity for a commodity reflects the purchasing power of the commodity relative to the base period. The constancy of price relationships sought is criticized on the ground that it is a static concept. It ignores demand-supply interaction and would make investments sticky and retard technological advance. This apart, the

formula is considered to have a built-in mechanism for self-escalation of prices of some commodities relative to others, if they happen to be included in both the prices received and prices paid indices.

9.15 Another important criticism is that the price parity, like parity ratio does not meet the policy goal of equity. It is argued that the agricultural problem is not really a price problem but an income problem. It is, in fact, not a total agricultural income problem but a net per farmer income problem. This requires measures different than those recommended to solve the price problem. The suggestion is that quantities should also be taken into account to rehearse changes in income.

9.16 The technicalities of constructing the indices have also been criticised. The base period and items in the index can be selected to suit almost any designed objective. The price ratio could be made to support any view by adjusting the weights in the formula even with the same base, which could also be achieved by changing the base period. It is therefore, erroneous to give undue weight to the absolute values of the index. It is the trend which reflects the situation more realistically. The only legitimate use of parity indices, therefore, is to observe the over time overall movement of relative prices.

U.S. Experience

9.17 The experience of using the parity price concept as a means to determine price support has not been considered healthy by many U.S. economists and policy makers. But once introduced it became a part of the economic faith of farmers lobbies who accepted it without question as an objective measure of a fair price. The argument that equity or fairness is a subjective and arbitrary concept which lacks objective measurement proved of little help. The policy makers found it too difficult to extricate farm

policy from the parity idea. Attempts were, therefore, made from time to time to dilute the parity price concept.

The Indian economic scene and the parity concept

9.18 The parity concept is not entirely new in India. As early as in 1946, at the instance of the Government of India, the Board of Economic Inquiry, Punjab constructed an index number series of parity between prices received and prices paid by Punjab farmers for the period 1939-1949. The purpose was to observe the effect of the second world war on farmers. This series, with 1939 as base, is available upto 1963-64. A fresh study with 1962-63 as base was subsequently undertaken.

9.19 Some stray attempts have also been made in some other States such as Assam, U.P., and West Bengal. Up-to-date series for these States were, however, not readily available.

9.20 Although the Punjab parity index number series is still being compiled and published, no serious attempt seems to have been made to make use of it in economic analysis for policy purposes.

9.21 With the introduction of new agricultural strategy based on newly emerging HYV - fertilizer technology, the pressure for incentive prices for farm products began building up. The inter-commodity price differences also began to be highlighted.

Recommendation of the National Commission on Agriculture on parity

9.22 The National Commission on Agriculture dealt with the issues involved in the adoption of parity concept in India. The inter-commodity price parity, inter-sectoral price parity, input-output price parity and parity between prices received and prices paid for consumption goods

by farmers were considered. Out of all these, the only parity relationship considered 'legitimate' by the Commission was that of input-output prices.

9.23 An Integrated price policy involving inter-sectoral prices was considered desirable by the National Commission on Agriculture in the interest of balanced and planned growth of the economy. Yet, the Commission was of the view that unless production and prices were controlled, the desired integrated price structure was not possible. They observed that "In an agricultural economy susceptible to vagaries of rainfall, fluctuations in production are too frequent and sometimes too severe to permits stable link (parity) between prices of agricultural and non-agricultural commodities". They further observed that such a parity may not necessarily be to the advantage of the farmer-producer.

9.24 As for the parity between prices received for the produce and prices paid for consumer goods by farmers, the Commission was of the view that, "any automatic linkage between prices received by the farmers for his produce and prices paid by him for the consumer goods will only feed the vicious circle of cost-price Inflation and will not only not contain the problem but make it worse for everybody including the farmers".

9.25 Although the Commission favoured parity relationship between input and output prices yet it suggested that, "an Index Number of Parity between the prices received and prices paid by the farmers both for domestic and farm expenses be constructed so that a watch can be kept on the behaviour of the parity and remedial measures taken whenever the parity goes unduly against the farmers".

Farmers organisation and parity

4.26 The Farmers Federation of India circulated a note on Kisans' case for parity price suggesting

that agricultural prices should be determined according to the principle of parity which seeks to maintain a balance between prices received by farmers and prices paid by them, with reference to agreed base year, and Government should make it known that it would not intervene in the food-grain trade so long as the trade operated within 85 per cent and 115 per cent of this parity price.

Economists' Committee on parity

9.27 The Economists Committee, appointed by the Government of India to look into the question of parity as a tool for fixation of agricultural prices, was of the view that the policy effort in India was to increase overall agricultural production and to induce changes in the cropping pattern in accordance with the changes in the composition of demand besides ensuring that the rise in prices associated with periodic shortages does not push basic necessities out of the reach of the common man.

9.28 The Committee felt that agricultural price policy was rather a feeble instrument for pursuing the goals of income policy, India had set before itself. These objectives of income policy could be achieved by more direct and effective instruments like greater public investments in rural development, agricultural land property ceilings, taxes and subsidies, discrimination in supply of inputs credit, essential consumption goods and social services, etc., in favour of rural areas and small farmers.

9.29 The Committee was of the view that a mechanical formula approach based on parity index of prices received and prices paid by farmers in a given base period had serious limitations. Followed mechanical, it will freeze the price relationships to the demand - supply situation prevailing in the past and thereby obstruct allocation of resources as per changing economic situations

9.30 The Committee felt since several factors entered into the determination of administered prices, the approach must allow adequate flexibility. It observed that even in U.S.A. a number of changes in the parity approach were effected over time to overcome the defects of the mechanical formula and the system currently in vogue allows a great deal of flexibility and wide discretion to the price fixing authority.

9.31 The Committee finally recommended that the changes in the terms of trade, particularly the input ^Voutput price ratios facing the farmers may also be considered by the Agricultural Prices Commission in addition to such other factors as it already considered in making recommendations on administered prices.

Desirability of constructing parity index

9.32 In the predominantly agricultural country, the developmental process changes the capital structure of farms and is invariably accompanied by changing enterprise combination of farms in different regions in accordance with the principle of comparative advantage. The contention that parity prices with a fixed base period, which tends to freeze the price relationship to the past, may hinder the achievement of the otherwise optimal or desired enterprise combination can-not be brushed aside easily. To the extent parity prices obstruct the process of enterprise adjustments; they create inefficiency and loss of the aggregate agricultural output.

9.33 As already mentioned, parity price index denotes changes in relative unit purchasing power without quantity changes, purchasing power changes can reflect income changes can reflect income changes only when quantities are constant. But quantities of output of farmers are never constant. They change either due to technological changes or due to weather variations. In a developing economy and with a major or trust on agricultural development via massive effort for

spread of technology, the output situation is not static. Parity price, therefore, can not reflect relative economic well-being of the farmers.

9.34 The Committee is of the opinion that the role prices in promoting agricultural production is subject to a number of limitations in a country like India.

9.35 Further, price is also a partial and not the sole determinant of income just as it partial and not the sole determinant of output. The Committee finds itself in agreement with the National Commission on Agriculture when they stress that the reliance on higher prices as a major incentive to augment production, "misses the point that the aggregate (sector) supply response to price is quite weak".

9.36 The Committee feels that any mechanical and rigid application of parity formula is not in the long run interest of agricultural development. Such an approach will not only restrict resource mobility between crops and regional shifts in crop complexes but will also generate rigidity in policy making from which it will be difficult to pull out.

9.37 The income elasticity of demand for farm products is generally lower than of industrial products, Income increases in rural and urban areas can, therefore, be expected to put additional pressure on Industrial products. Such a situation may cause occasional swings in the terms of trade in favour on industry. Parity-based administered prices of agricultural products held high during bumper crops coinciding with such a situation may result in escalation of input costs at a time of general inflation.

9.38 The Committee does not believe that the parity price approach will necessarily help advance income parity. The well documented U.S. experience provides ample evidence to prove that such a policy has helped mainly the large farmers who have large surpluses to sell.

Large farmers buy most of the subsidised inputs and sell most of the price supported output. Small farmers use fewer purchased inputs and sell a small amount of output.

9.39 Parity-based price support escalating costs of inputs, specially the land value, has been extensively reported. Although, all land owners receive the benefit of capital gain, the large farmer, under expectation of higher output prices, is best able to bid higher price for additional land. Land values rising disproportionately produce a ratchet effect on costs and are generally disadvantageous to the small farmer and the landless.

9.40 The objective of parity income, therefore, can best be achieved through structural changes in land ownership, public investment in irrigation, distribution subsidized input to small farmers, etc. Price mechanism, relatively a weak instrument in itself for the purpose in an imperfect economy may contradict the other welfare programmes if the parity price approach is adopted mechanically.

9.41 Notwithstanding these limitations of the parity index of prices received and prices paid, the Committee is of the view that it can be useful to gauge the relative movement of prices over time. Some oscillation of the index number would be the normal result of changes in the supply and demand situation and need not be viewed with alarm. The concern should mainly be to foresee unduly sharp swings and take preventive or ameliorative measures well in time to avoid undue loss for the farmers.

9.42 For this purpose, it is the trend that is more important than the absolute level of the index.

9.43 Two types of parity indices are constructed by various countries of the world that are reported regularly by the F.A.O. Some countries construct parity indices as a ratio between prices received and prices paid by farmers for production inputs

only. Others include price paid for consumption goods also along with the production inputs in the denominator.

9.44 The difference seems to lie in the policy objective. When relative production profitability over time is the objective, the index of prices paid for consumption goods is not needed. However, If the objective is to observe changes in the terms of trade between agricultural and manufacturing sectors both consumption and production items become relevant.

9.45 An important problem which has to be faced in the construction of the prices paid index relates to the generation of the weighting diagrams. If prices paid index is to be based on both production and consumption items then besides the cost of production surveys, family living surveys too need to be carried out, at least for the base period. As it happens, most countries do have cost data readily available for the purpose. But corresponding consumption surveys are still not that common.

9.46 In India, cost of production studies are being carried out on a continuous basis. The data required for constructing prices paid index for production items are, therefore, readily available. The continuing surveys even permit construction of the prices paid index for production items on the basis of a moving average also. However, to construct the index of prices paid for domestic expenditure, special survey will be needed.

9.47 The additional cost involved in conducting nation-wide family living surveys must be justified by substantial improvements in the parity index. The basic criterion can be the divergence between the Index of prices paid for consumption and production items. If both series bear high correlation and move in the same direction then one of them can be left out without much loss of efficiency.

9.48 Food articles seem to have a weight between 50-60 per cent in the domestic expenditure of Indian farmers. Further, most of the food items consumed by farmers in India have a small component of processing services. For these reasons, prices paid index for domestic expenditure for goods originating in the farm sector including manufactured articles, should move in sympathy with the prices received index. For the same reason, the labour costs can be expected to move in the same direction and the hired labour costs, which forms a part of the production costs, may provide to a large extent a proxy for consumption expenditure.

9.49 The combined effect of all the above facts are such that the prices paid index for production items may serve as a proxy for a similar index for domestic expenditure also and thus obviate the need for special family living surveys at least so long as the present rural earning-expenditure structure continue. An exercise conducted on the parity data published for Punjab showed that the correlation coefficient between the domestic expenditure and the cost cultivation index numbers for the period 1964-65 to 1977-78 was 0.95. The strong correlation confirms that the trend in parity index can be reflected adequately without undertaking the extra expenditure on family living surveys.

9.50 The consumption in the India is highly diversified. Many items are area - specific, having no national market. Quality differences of good consumed too may be pretty high. For these reasons construction of all-India index of prices paid for domestic consumption goods for use in the parity cost of production surveys. The value of the index of prices paid for consumption goods, therefore may be open to question.

9.51 Giving, however, due consideration to the different view - points on the parity concept itself and the computational problems involved, the Committee is of the opinion that the construction

of parity index of process received and prices paid by farmers is desirable. As for its use, the Committee feels that the parity index should be used to keep an overall watch on the income terms of trade between the agricultural and the industrial sectors.

9.52 The Committee suggests that to begin with the parity index of prices received and the index of prices paid for production inputs.

9.53 In the mean time a study of family living costs, consumer preferences and price behavior of various consumer goods in the various States may be under taken aiming at the standardization of the methodologies and reconciling controversies regarding concept, etc.

9.54 Once a sound empirical basis for inclusion of domestic expenditure in the prices paid index has been laid out, a new parity series can be easily constructed on the basis of the same sample of holding as is being used for the cost of production surveys.

9.55 Mean while, the Cost A index as recommended by the Committee should provide a reasonable proxy for the basic purpose for which the parity index has to be kept in view.

9.56 The conditional prices paid index is constructed with some specified base year weights and prices of index reported by the selected centres. On the other hand, cost A_1 index recommended by the committee is constructed using costs actually incurred by the farmers. The problem of changing weight and differences in prices are thus avoided. The controversy regarding imputations involved in computing cost B_1 to C_1 is also avoided.

9.57 Unit costs reflect both expenditure and yield; Hence Cost A_1 index will reflect changes both in prices and yield. The weather effects also get reflected via yields.

9.58 An additional advantage of Cost A1 index is that it will already constructed as a part of the cost of cultivation scheme and hence no additional effort or cost will be required. One significant methodological gain will be that Cost A₁ being available on a continuing basis the parity index can be based on a moving average of prices received and Cost A₁. Abrupt changes in the index will thus get normalized.

9.59 While recommending the construction of parity, the committee does not favour any mechanical application of parity for price fixation. Determination of the administered prices is too complex a matter to permit use of a rigid formula whose components may contain elements of doubtful value.

SECTION - X PRODUCTION COST ESTIMATES AND ADMINISTERED PRICES

10.1 The terms of reference of the Committee, as given originally, limited its scope of work, prima facie, to cost of production of crops. The purpose for which the cost estimates were required to be generated under the scheme had not been spelt out.

10.2 However, the very origin of the cost of cultivation scheme lies in the need felt by the Agricultural Prices Commission for scientifically generated cost estimates and the subsequent recommendation of the First Report of the Standing Technical Committee on Indices of Input Costs.

10.3 The criticism of the existing Scheme reviewed elsewhere as well as the inclusion of parity price in the expanded terms of reference implicitly indicate the use of cost estimates generated under the scheme, inter-alia, for the determination of administered prices.

10.4 Given this context, the Committee considers it advisable to indicate the extent to which the cost estimates generated under the modified scheme can be used for the determination of administered prices of various crops.

Tasks before the price fixing authority

10.5 The Committee agrees with the view that a pricing policy that keeps the administered prices too far removed from the long-run equilibrium level for too long is likely to fail. The primary task of the price fixing agency, therefore, is to discover this long-run equilibrium price and to correct the distortions that emerge due to market imperfections affecting the short-run behaviour of prices of individual commodities. The major effort, therefore, is to prevent prices from moving too far from the long-run equilibrium path and to bring them back to it when they actually move away from it.

10.6 The administered prices so managed should not only generate adequate production but also clear the market. The social cost to the economy will then be minimal.

Cost of production and, pricing decisions

10.7 For managing through an ideal pricing policy, cost of production of crops provides valuable information. However, costs reflect only the supply conditions. On the other hand, prices in an economy are determined by the forces of demand and supply for the commodities under varying conditions of money supply, trading practices and income distribution. For this reason, cost of production is only one of the criteria for the fixation of administered prices. It cannot be the sole criterion.

10.8 The cost of cultivation scheme provides cost estimates only. Further, most of the supplementary information for fixing prices is known with a varying degree of error. Hence judgment

is almost always involved in fixing prices. For this reason, the Committee does not favour any automatic or mechanical use of the cost data in the fixation of prices.

Administered prices

10.9 Administered prices are generally, of three kinds (1) minimum support price, (2) procurement prices and (3) maximum price.

10.10 Each one of these prices has a specific role in the economy. All of them may or may not be required to be fixed for any single commodity at any particular period of time.

10.11 By its very nature, the; minimum support price has the objective of providing an insurance against a sudden and precipitous fall in the market price due to short-term fluctuations. At this price, the Government makes a commitment to purchase all the produce offered for sale. The protection so offered ensures the desired allocation of farm resources in the production of the commodity.

10.12 The implications of the government are obvious. In the first instance, budgetary provision have to be made for the purpose. In general, the higher the support level the higher is the budgetary liability and vice versa.

10.13 Procurement price is the at which the Government buys, at its discretion, a certain proportion of the marketed surplus to meet the various obligations. In this case the quantity procured is limited and can be altered by the Government.

10.14 Procurement price should be as close to the normal equilibrium price as possible with the right of pre-emption by the State. At this level, the market distortions will be the least.

10.15 The support price, on the other hand, stands on a different footing. Its purpose is to protect the efficient farmer from occasional losses. The objective is best attained when the support price just covers the total cost of the efficient (low cost) farmers and is not lower than the variable costs of the marginal farmer (high cost). This will ensure that the efficient farmer continues to commit the needed resources to the crop. On the other hand, the inefficient farmer will not get support for his inefficient use of resources. So he will be included either to produce the commodity more efficiently or divert his resources to more efficient uses.

10.16 This seemingly simple economic principle, however, poses serious operational problems. The support price, to be meaningful, must be declared before the sowing time, i.e., well before the resources are committed to the production of the competing crops. The procurement price too should be declared before the marketing operations start.

Judgment on Price Levels

10.17 The requirement of timeliness in the announcement of prices implies - the price - fixation agency has to foresee the demand supply situation ahead of the sowing or the marketing seasons. Historic cost price trends, relative price movements of inputs and products and general behavior of the economy could serve as guidelines for this purpose. Since most of the economic indicators are available only after a considerable time lag and are known to have inaccuracies, judgment is inevitable in the process of fixing levels of such administered prices.

10.18 At the same time, it is a wise policy to narrow down, the users of discretion as much as possible. Given the historic cost price data from the cost of cultivation scheme and other readily

available sources, it is possible to define at least in principle, a certain range within which judgement needs to be exercised.

10.19The Committee has studied the cost data generated under the scheme for the last 7-8 years. The cost price relationships and their spatial and temporal movements have also been examined. Based on these observations, certain broad inferences consistent with the economic principles mentioned above have been derived which, if adopted, should help the Agricultural Prices Commission to make an informed judgement on price level of various crops.

10.20The cost of cultivation scheme has been adequately modified so as to provide all possible information on cost structure of principal crops as well as their competing crops. Cost indices and cost components in physical and value terms will also be available. The latest behavior of costs will be reflected in the advance cost estimates and their indices. And what is important, much of this information has been planned to be available to the Agricultural Prices Commission in time for decision making on support or procurement prices.

10.21It is sometimes suggested that marginal cost may provide a basis for determining an appropriate level of administered prices. The Committee is of the view that: (a) the variable cost of the marginal farmers, which does not include rent, is not necessarily higher than the average cost of the sample farmers, which includes rent, and (b) marginal cost is much less stable than the average cost. In view of these considerations the Committee supports the views of the Standing Technical Committee on indices of input Costs in the matter. However, the proposed scheme will provide adequate information for generating marginal costs, howsoever defined.

10.22In the modified scheme, care has been taken to permit a smooth and timely flow of information right from the field men's level to that of the Agricultural Prices Commission. While the Agricultural Prices Commission, as the end user, may devise its own methods to make the best use of the information, the Committee feels that the graphic illustrations for related crops, of the cost-price information and their moving averages can be a useful guide in narrowing down the decision arena.

10.23The Committee has recommended the computation of index numbers of Cost A_1 and Cost C_2 . These indices, besides being useful in themselves, are to be used to compute the "extrapolated price" as per procedures recommended for the purposes. (7.18, 7.19). Index number of Cost A_1 is to be regarded as provisional and replaced by the index number of Cost C_2 as soon as the latter becomes available.

10.24The procurement price may be fixed around this "extra pointed price". The exact price around this level will have to be determined on the basis of judgment keeping in view the likely demand-supply situation for the commodity and the price trends of related crops.

10.25 Since the "extrapolated price" is based on the average farm harvest price in a base period, when both input use and production have been going up, it provides a fair cushion for the rise in paid-cut costs plus a reasonable margin, inter-alia, for profit.

10.26It will be useful to compute the average weighted margin for all important crops during this base period between the farm harvest price and cost C_2 , C_1 and A_1 and keep this in view in taking a decision about the price policy. A proportionate adjustment for factor 'K' for management expenses (4.52) may be made in this margin, wherever necessary.

10.27 As for the support price, it has already been said that its level should be such as to just cover the average cost of an efficient farmer. Resource allocation between competing crops in a season, of course, depends on their relative profitability which is a function of both relative costs and prices. Price support should only ensure that the efficient farmer is not compelled to withdraw resources from the crop concerned due to sudden and precipitous fall in prices.

10.28 The extrapolated price, as has been noted, contains an element of net profit above Cost C_2 . The support price may be normally fixed at a level somewhat below, say, the 3 year moving average of the 'extrapolated price'. In deciding upon the margin between the extrapolated price and the support price, the base period relationship between the harvest price and different types of costs, especially Cost C_1 (4.85) need to be kept in view.

10.29 Similarly, when maximum price has to be fixed for any specific commodity it may be reasonable to fix it at a similar level, higher than the extrapolated price.

10.30 These recommendations pertain to the general cases. In exceptional cases (such as when it is desired to encourage the production of a particular crop or a new variety), the Agricultural Prices Commission may, in its judgment, fix their prices at higher levels depending on additional information or just plain judgment to provide the requisite incentive and to cover any special risk involved.

SECTION - XI SUMMARY AND RECOMMENDATIONS

Summary

11.1 The terms of reference given to the Committee are comprehensive covering the conceptual, statistical and organizational aspects of cost

of production studies. The addition of reference on parity index further extended the scope to encompass the cost price relationships.

11.2 The Committee has found it necessary to recommend a slight modification in the sampling design. A crop complex, rather than a single crop, has been recommended as a basis for sampling. The change is expected to permit representative cost estimates of a larger number of crops, including the crops grown in rotation, to be generated without changing the ultimate sample size. Sub sample scheme has been dropped and the enquiry is to be conducted for the same sample holdings for three years.

11.3 State-wise cost estimates are to be generated for all important crops, in the first stage. Appropriate weighting technique is generating all India estimates.

11.4 The Committee favours costing of inputs on the basis of actual paid out expenses. Imputed values are to be based, as far as possible, on the principle of opportunity cost. Based on this criterion, some modifications have been recommended in the computation of imputed values for owned land and family labour; rates of interest; time period for charging interest on working capital and the labour and expenses involved in discharging genuine managerial functions. The committee does not favour any arbitrary charge for bearing risk which is treated as an entrepreneurial function and hence rewarded in profit.

11.5 The committee has suggested that, in addition to costs based on actuals, it may be useful to estimate, for analytical purposes, alternative set of costs based on statutory rates as in force and applicable to any item of input.

11.6 The Committee has recommended a new cost classification which, while retaining the distinctive features of paid out costs and imputed

costs, regroups the components so as to distinguish between constituents that are price determining from those that are price determined. The new classification besides being useful in itself, will give an idea of the element of plasticity obtaining in agricultural costs and may be helpful to the price fixing authority.

11.7 The Committee observes that the present arrangement for the collection, scrutiny, processing and analysis of data are very inadequate. A three pronged improvement has been recommended.

- i) Strengthening of the field supervision and compilation: For this purpose, one field supervisor and one computer for every 50 sample holdings have been recommended. This is in conformity with the well established norm adopted in earlier farm management surveys.
- ii) Strengthening of the Central Analytical Unit: While no addition to administrative staff at the Directorate of Economics and Statistics is visualized, some addition to the technical staff in the Central Analytical Unit is Recommended to cope with the additional work involved.
- iii) A joint cooperative responsibility between the Directorate of Economics and Statistics and the implementing agencies has been envisaged. For this purpose,
 - (a) The Directorate is visualised as a central servicing agency which will receive and store all data collected under the scheme on magnetic tapes, generate cost estimates and supply the same to the Agricultural Prices Commission, It will publish all summary tables and along with the computer listing forward a copy of the same to the implementing agencies for further research.

- (b) The implementing agencies will retain a copy of the data sent to the Directorate and on receipt of Summary tables and computer listing undertake an agreed minimum, farm business and input-output analysis and write and publish annual reports. They will also be free to undertake further research at their own discretion.

11.8 In recommending these organisational arrangements, the Committee hopes that the research on farm economic problems based on the survey data collected at a substantial cost to the exchequer will be revised. In the event these arrangements fail to bring about the desired improvements, the Committee has recommended that the work may be assigned to an autonomous central research institute of the type contemplated by the Indian Council of Agricultural Research.

11.9 The Committee has laid great stress on timeliness in generating cost estimates for use in decisions regarding support/ procurement prices. The Strengthening of the field agencies and the central analytical unit is particularly envisaged in this context. It has been recommended that the scheme of monthly compilation and tabulation be revived and, based on them, the advance cost estimates be generated for use in fixing support prices. Concurrent tabulation will also permit use of current cost information in the formulation of procurement prices.

11.10 The committee has pointed out the difficulties in using absolute cost as a guide for price fixation. Instead, it recommends use of index numbers of costs for the purpose. A three-year base period (1975-77 to 1977-78) has been suggested. It is recommended that annual Index numbers of Cost A_1 and cost C_2 for each crop be prepared at the all-India level and, where feasible, for the States as well. The Committee has also recommended construction of index numbers of physical quantities of inputs used and outputs obtained as well as indices of net returns.

11.11 The Committee has suggested the computation of "extrapolated prices" based on the index of costs generated under the scheme and the base period farm harvest prices, which, in its optimum could be useful taking decisions regarding support/procurement prices.

11.12 The Committee finds it advisable to construct parity index of prices received and prices paid by farmers to gauge the relative movement of prices over time. The objective should be to identify trends towards unduly sharp swings and to take preventive or ameliorative measures well in time to avoid undue loss for the farmer.

11.13 The Committee is of the opinion that the agricultural problem is not really a price problem but is a net farm income problem. The parity price, reflecting purchasing power per unit of output relative to a base period fails to reflect the parity income which is the real indicator of well being. As such the Committee does not favour any rigid procedure in the determination of administered prices.

11.14 The Committee recommends that, to begin with, the parity index of income terms of trade between agriculture and manufacturing sectors may be based on prices paid index for production items only. Cost A_1 index may be used as a proxy for the purpose. It also suggests that simultaneously steps be taken to initiate comprehensive family living surveys to standardise the methodology to avoid controversies similar to those faced in the implementation of cost of production surveys.

11.15 In the context of the likely use of cost of production estimates in the determination of administered prices, the Committee has made some observations on the relationship, between cost of production estimates generated under the Scheme and the administered prices.

11.16 The Committee has stressed that cost of production is only one of the criteria for the fixation of administered prices. It cannot be the sole criterion.

11.17 The Committee maintains that the distinction between minimum support price and procurement price is useful. The support price at which the Government commits to Purchase all the produce offered for sale has the objective of providing an insurance against a sudden and precipitous fall in market price and to ensure desired allocation of farm resources in the production of the Commodity.

11.18 This Objective is best attained when the support price just covers the cost of the efficient (low cost) farmers and is not lower than the variable cost of the high cost for the marginal farmer.

11.19 The Procurement price, on the other hand, is the price at which the Government buys at its discretion a certain proportion of the marketed surplus. It has, therefore to be as close to the long run equilibrium price as possible.

11.20 The Committee has suggested the use of "extrapolated price" based on index numbers of cost A_1 (to be replaced by those based on Cost C_2 , when available) and the average farm harvest price in the base period.

Recommendations

Design of study

1. Keeping the limitation of the existing scheme in view, a modified sampling design has been recommended. (3.15 and Appendix III)
2. The new series of series of studies may be undertaken state-wise, as at present. The basis of sampling will now be a crop complex so that the sample is representative of a group of crops rather than a single crop. (3.16)

3. There will be no increase in sample size (3.17)
4. In case village /clusters will be kept under survey for a period of three years. (3.20)
5. In cases when some minor/localized crops or varieties of crops raised in small areas do not find adequate representation in the sample, it will be necessary to supplement the existing sample (3.22 and 8.14)
11. Annual workshops consisting of officers-in-charge of the scheme, the officers of the Directorate of Economics and Statistics and Agricultural Prices Commission should be held regularly. (3.44)

Cost concepts

Arrangements for processing /analysis of data

6. The Processing of basic data for generating cost estimates will be the responsibility of the Directorate of Economics and Statistics the implementing agencies and other research organizations may undertake studies on farm business and input-output analysis based on the sample collected in the scheme. (3.39(a))
7. All the data received by the Directorate will be transferred on magnetic tapes. Cost estimates will be derived as per scheme at Appendix III, index number will be computed as per scheme at Section VII and the results will be communicated to the summary Price Commission. Simultaneously, the Directorate should publish a report giving the summary tables and mail copies of the computer listing as is done presently. (3.39(c))
8. The Implementing agency will undertake the input-output analysis depth and bring out annual reports giving an agreed minimum analysis (3.39(d))
9. All the data on tapes shall be available to any research worker or research institution for further research. (3.39(e))
10. The work may be assigned to an autonomous all-India Institute (like the Central Agricultural Economic Research institute under consideration in the I.C.A.R.) with this scheme as the nucleus, if the suggested arrangements do not bring about the desired improvements. (3.41)
12. The hired human labour - attached or casual - be charged at the actual paid-out cost. (4.10)
13. The cost of family labour may continue to be Imputed at the wage rate of the attached farm labour whenever sufficient and reliable data for the latter are available. In other cases, cost of family labour may be imputed on the basis of the wage rate for casual labour obtaining during the period of operation. Whenever family labour does any skilled job like a tractor driver, the ruling wages of the latter may be taken into account but only for the hours or days for which such skilled work is undertaken. (4.18)
14. A weighted average interest rate from various sources, institutional and non-institutional, obtained from the survey data itself may be used for working out interest on owned fixed capital. The weighting diagram should be based on source-wise loans taken by the sample cultivators. The weighting may be revised every five years or so. (4.20)
15. A similar exercise may be undertaken to compute the interest on working capital by taking a weighted average rate based on the short term loans taken by the sample farmers (4.6).
16. Regarding the period for which the interest on working capital should be charged, a weighted average period, taking value of inputs used during different months as weights, be computed from the survey data for each crop separately and interest be charged accordingly. (4.24)

17. The rent on owned land should be computed on the basis of market rents. In cases where renting is not very common, data on actual rents paid by other cultivators in the sample village/cluster may be used and, if necessary, the schedules may be suitably modified to collect this information. In cases where this is not adequate, a five year average of the actual rents may be taken for this purpose. (4.38)
18. The actual time spent on managerial function may be evaluated at family labour rates. If actual expenses incurred are added, it will approximate total expenses on managerial function. A factor, K, as a ratio of such managerial expenses to Cost A₁ may be used as a proxy for allocating the total managerial expenses between enterprises. (4.52)
19. No allowance may be added to the total cost on account of risk and uncertainty as these are supposed to be covered by profit. (4.60)
20. All joint costs may be allocated on the basis of use. Where it is not possible to determine the use-time, the cost may be allocated on the basis of value of gross produce. (4.62 and 4.65)
21. Rents should be allocated in proportion to the value of gross output of each crop to the value of the total gross output of all the crops raised, where these are not specified for each crop separately. (4.66)
22. In case of mixed crops, while the identifiable direct costs should be charged to the concerned crop, the joint-costs may be apportioned between them on the basis of the proportionate contribution to the aggregate value of gross output, made by each of the mixed crops. (4.72)
23. The proportionate method of allocation of costs between the main product, and by-product be followed. (4.76).
24. Transport and marketing charges form part of distribution costs and not of cost of production. (4.78)
25. It may be useful to estimate for analytical purposes alternative costs, after subjecting the actuals to such statutory limits regarding wages, rent and interest as may be in force. (4.80 and 4.88).
26. The following classification of costs be adopted:
 Cost A₁: All actual expenses in cash and kind incurred in production by owner operator.
 Cost A₂: Cost A₁ + rent paid for leased-in land.
 Cost B₁: Cost A₁ + interest on value of owned capital assets (excluding land).
 Cost B₂: Cost B₁ + rental value of owned land (net of the land revenue) and rent paid for leased-in land.
 Cost C₁: Cost B₁ + imputed value of family labour.
 Cost C₂: Cost B₂ + imputed value of family labour. (4.85)

Arrangements for reducing delays

27. The ratio of 10:1 between the sample farmers and fieldmen is reasonable. However, in areas where the terrain is difficult, distances are long and communication and transport poor, appropriate adjustments may be made. (5.6)
28. The Committee recommends a holding-cluster approach. A village will be selected in the manner the nucleus village is being selected at present. A second or a third village may be added only if the total number of holdings in that village is less than 200. (5.8)
29. A bicycle may be provided to the field men or an appropriate cycle allowance be granted in all cases where the coverage is spread over more than one village. (5.9)
30. There should be one field supervisor for every five field men. (5.11)

31. There should be one computer for every fifty sample farmers. (5.14)
32. The analytical unit at the centre maybe adequately strengthened to cope with the enlarged coverage expeditiously. (5.27)
33. The concurrence of the State Government need not be sought while finalising cost estimates. (5.29)
41. The following Index numbers may also be constructed:
 - (1) Index number of physical quantities of Inputs used.
 - (2) Index number of physical quantities of output.
 - (3) Index number of prices paid for materials and labour used.
 - (4) Index number of prices received.
 - (5) Index number of gross value of output
 - (6) Index number of Cost A1 and Cost C2 (advance and final estimates)
 - (7) Index number of farm business income. (7.29)

Advance estimates of costs

34. The Committee recommends the generation of advance estimates of costs. (6.13 and 6.26)
35. Attempt can be made to generate absolute cost estimates on The basis of the current data. (6. 30)
36. For constructing the index numbers, a three year based period, appropriately chosen, will better than a single year base period. This period may be uniform for all the crops (7.3 and 7.4)
37. The three year period, 1975-78 to 1977-78, may be taken as the base Period. This may be revised every five years or so in the light of changing technology and changing economic structure. (7.8 and 7.9)
38. For the present, it should be enough to prepare index numbers for the principal crops for which there is currently a felt need. (7.11)
39. In view of the difficulties in using the absolute cost estimates as a guide for price fixation annual, State-wise and all-India index numbers of Cost A1 and Cost C2 may be prepared. The former may be replaced by the latter as and when available. (7.13, 7. 21 and 7.24)
40. The index number of Cost A1 maybe applied to the average harvest price for the base year of the relevant crop for computing "extrapolated prices" at the first instance. This may be replaced by "extrapolated prices" based on index number of Cost C₂, when available. (7.18)
42. The index number series may be published regularly. (7.35)

Coverage

43. There should not be any further extension of territorial coverage of the scheme for the present. (8.19)

Parity index

44. It is desirable to construct parity index of prices paid and prices received by the farmers. The index should be used to keep an overall watch on the income terms of trade between the agricultural and industrial sectors. (9.51)
45. To begin with, the parity index may be based on the index of prices received and the index of prices paid for production inputs. (9.52)
46. The index of Cost A1 should provide a reasonable proxy for the basic purpose for which the parity Index has to be kept in view. (9.55)
47. The Committee does not favour any mechanical application of parity formula for price fixation. (9.59)

Production cost estimates and administered prices

48. The Committee does not favour any automatic or mechanical use of the cost data in the fixation of prices. (10.8)
49. The procurement 'price maybe fixed around the "extrapolated price". (10.24)
50. The support price Nay be normally fixed at a level somewhat below, say, the three year moving average of the "extrapolated price". (10.25)
51. A maximum price, if necessary may be fixed at a similar level, higher than the "extrapolated price". (10.29)

(S.R. Sen)

(C.H. Hanumantha Rao)

(Daroga Singh)

March 1980

REPORT OF THE EXPERT COMMITTEE FOR REVIEW OF METHODOLOGY OF COST OF PRODUCTION OF CROPS G.O.I.

SUMMARY OF RECOMMENDATIONS

SAMPLING

1. The crop complex approach may be combined with the single crop approach for providing representative estimates for special/minor crops (2.7)
2. A reasonable addition in sample size for each special crop may be a sample of 10 clusters per crop in a state, This may, however, be viewed in the context of performance of the estimates (2.9)
3. Precision of the estimates may be worked out on a regular basis (2.10)

VALUATION OF LABOUR

4. The casual hired labour may continue to be evaluated on the basis of actual wages paid whether they are market wages or statutory minimum wages. (2.18)
5. CACP may specifically assess the latest position every year in regard to the rise in wages including the enforcement of minimum wages in different parts of the country on the basis of their discussion with various sections and take this into account while using the input cost index for recommending procurement /minimum support prices (2.19)
6. Family labour be valued on the basis actual wage rate for casual labour (2.22)

MANAGEMENT COST

7. In order to account for management input of the farmer the paid out costs be raised by 10 per cent and a separate cost (Cost C₃) be computed by adding this component (2.26)

RENTAL VALUE OF OWNED LAND

8. The ratio of rent paid/received to the gross value of output for each crop, irrigated and unirrigated, in the selected village/cluster may be derived from a survey of land leases on a complete enumeration basis and used for determining the rental value for the sample farmers. The exercise may be repeated when a new sample is drawn after every three years. (2.34)

TRANSPORTATION

9. Transportation costs become relevant only if the farm produce is procured/sold outside the village in while case the CACP should take these costs into consideration. (2.35)

INTEREST RATES

10. Weighted interest rates as recommended by the Special Expert Committee may be computed and revised every five years. (2.36)

JOINT COSTS

11. The recommendations of the Special Expert Committee relating to the allocation of joint costs between individual crop enterprises may be implemented at the earliest. (2.37)

TERMS OF TRADE

12. For construction of indices of prices paid by the farmers, for commodities purchased for final or intermediate consumption, the retail prices are the appropriate yardstick. Efforts should be made to construct the indices of retail prices on the pattern of wholesale prices. (3.10)

13. A Task Force may be constituted by the Ministry of Agriculture to look into the problems relating to the terms of trade between agricultural and non agricultural sectors in its entirety and develop the methodology for constructing the index numbers of terms of trade. (3.12)

14. The committee does not favour any automatic linkage of the terms of trade index with the procurement /minimum support prices, Corrective measures may be taken if the terms of trade for the agricultural sector are persistently unfavourable. (3.14)

15. Once the methodology for construction of index numbers of terms of trade is decided, the index numbers may be prepared by the Directorate of Economics and Statistics and published regularly. (3.15)

ADJUSTING PROCUREMENT /MINIMUM SUPPORT PRICES

16. Procurement /minimum support prices announced before the sowing season should always provide for the possible rise in the cost of production likely to occur during the cropping season. The CACP should also have a second look at the changes in input costs before the market arrival of the crop(s) and adjust the procurement support prices in case the observed rise in input costs turns out to be higher than the anticipated rise. (4.6)

17. The CACP should publish the methodology, including the weighting diagram and the index numbers of input prices used by them in their Reports. (4.8)

STRENGTHENING OF CENTRAL ANALYTICAL UNIT

18. The Central Analytical Unit should be strengthened to meet the various demands on the Scheme for economic policy and farm policy research in addition to making cost estimates available to the CACP. (5.6)

SECTION I INTRODUCTION

1.1 Recognising that cost of production of crops forms an important basis for the determination of the procurement /minimum support prices and realizing that the current methodology of estimation of cost of production needs to be thoroughly reviewed with a view to making it comprehensive and realistic to ensure fair returns to farmers for their produce, the Government of India vide their Resolution No.8-1/90-CS-ES/EA dated 6th January, 1990 constituted the Expert Committee to review the methodology and make suitable recommendations.

1.2 The forms of reference of the Expert Committee as given in the Resolution of the Government of India, areas follows:-

- (i) To examine the design, content and methodology adopted in regard to generation of cost of production estimates under the Comprehensive Scheme for Studying the Cost of Cultivation/Production of various crops;
- (ii) To review the 'terms of trade' between agricultural and non-agricultural sectors and suggest methods to safeguard the interests of the farmers; and
- (iii) To recommend any other measures to improve the remunerativeness of crop production.

1.3 The Government Resolution also required the Expert Committee to look into following aspects and submit its Interim Report on the same

- (i) Valuation of labour on the basis of statutory minimum wages or actual wage rate whichever is higher as against only actual wages which have been the basis so far;
- (ii) Adjusting procurement /minimum support prices announced before the sowing season for rise in costs of inputs during the period intervening the announcement of the procurement /support process and the arrival of the crop in the market; and
- (iii) To include managerial / entrepreneurial function performed by farmers as an input and treat the same as an item of cost.

1.4 The composition of the Committee is as under:

Chairman

Dr. C.H. Hanumantha Rao,
Institute of Economic Growth,
Delhi.

Members

Dr. D.S. Sidhu,
Punjab Agricultural University,
Ludhiana.

Dr. V. Rajagopalan,
Ex. Vice-Chancellor,
Tamil Nadu University of Agriculture,
Coimbatore.

Dr. Prem Narain,
Director, IASRI,
New Delhi

Member-Security

Dr. S.P. Pant,
Ex. Professor and Head of the
Department of Economics,
J.N. Krishi Vishwa Vidhyalaya,
Jabalpur.

1.5 The Committee was required to submit its Interim Report to the Government of India (Department of Agriculture & Cooperation) on the three specific issues mentioned in para 1.3 by 15th March, 1990, and its full report within a period of four months.

1.6 The Committee held discussions with the Commission for Agricultural Costs and Prices (CACP) particularly on the items relating to methodology followed by CACP for taking into consideration the likely rise in cost of inputs during the period intervening their own recommendation on procurement/ minimum support prices and the arrival of the crop in the market and methodology adopted for determining terms of trade between agricultural and non-agricultural sectors.

1.7 Discussions were also held with the Cost Accounts Branches of Bureau of Industrial Costs and Prices with regard to the treatment of managerial/ entrepreneurial functions by the small holders in plantations.

1.8 The Committee held a long discussion with High Powered Committee for Review of Agricultural Policies and Programmes on the issues pertaining to the Interim Report and was greatly benefited by the views expressed.

1.9 The Committee held discussions with the Economic and Statistical Adviser, Ministry of Agriculture, Department of Agriculture & Cooperation and examined the existing procedures followed in deriving the cost estimates of various crops.

1.10 A special word of thanks is due to the Economic and Statistical Adviser, Ministry of Agriculture, Department of Agriculture and Cooperation on whom fell the main burden of arranging meetings with various organisations, providing the material / empirical data and staff required by the Committee. In addition, the

Committee has benefited greatly by the discussions held with him and his Cost Unit. The Committee would also like to thank all other organisations and individuals for the cooperation extended to it. The Committee would like to put on record its appreciation of the diligence and competence which the Additional Economic and Statistical Adviser, Shri M.C. Joshi, ably assisted by Dr. V.P. Goel, (System Analyst) and Shri Vidya Dhar Programmer brought to bear on this assignment.

SECTION II DESIGN, CONTENT AND METHODOLOGY ADOPTED FOR GENERATING COST OF PRODUCTION ESTIMATES

2.1 Data on cost of production of crops is being collected under a Comprehensive Scheme of the Ministry of Agriculture through Agricultural Universities/Agro-Economics Research Centers Joined in different states. The methodology adopted for computing costs is the same as developed under the studies in the Economics of Farm Management and modified by the Special Expert Committee on Cost of Production Estimates. The sampling design for the cost studies was prepared by the Indian Agricultural Statistics Research Institute, New Delhi (formerly Institute of Agricultural Research Statistics).

2.2 With the changing situations the design, content and methodology for cost studies have been undergoing change. The present status and procedures adopted for computing various costs under the Comprehensive Scheme are given in Annexure I.

2.3 The Committee, after a careful review of the present procedures, feels that some changes are called for.

2.4 The modified sampling design, which has been followed from the year 1891-82, is based on crop complex approach such that the sample is representative of a number of crops rather than a

single crop as was the case in the past. In this approach, important crops to be included in the cost study are first identified for every state. The considerations for choosing the crops are: (a) the relative importance in the state and (b) the relative contribution of each state to the all-India production.

Limitation of the Crop Complex Approach with respect to Certain Special Crops

2.5 In many states, the crop complex also includes certain crops which are essentially minor crops grown in limited areas. These crops do not find adequate representation in the sample as they get the same weight as major crops at the allocation as well as at the section stage. This naturally results in poor estimation for these special crops.

2.6 This problem was realized when the crop complex approach was suggested. The Special Expert Committee recommended that for such crops the sample may be adjusted by selecting additional villages/clusters and suitable analytical methods be developed to pool the information collected in the general survey and the additional villages/clusters selected for the special crops. This recommendation still remains to be implemented.

2.7 The Expert Committee recommends that the crop complex approach may be combined with the single crop approach for providing representative estimate for special/minor crops.

Method of Sample Selection and Analysis for Special Crops

2.8 The single crop approach is needed to augment the small samples of the specific crops obtained from the crop complex approach. The first step is, therefore, to identify the special crops in each state. The sample size requirements for each crop may be decided on the basis of

knowledge regarding samples obtained in the previous surveys. Since special crops are grown only in the limited areas, it is essential to concentrate the effort mainly in those areas. This may be done by single crop approach. Similar to the main survey; in this case also, tehsils may be taken as first stage units. These first stage units may be allocated to different zones in proportion to the area under the crop. Selection of first stage units and second stage units (villages) may be done by probability proportional to area under the crop. Selection of cultivators within the selected villages may follow the procedure as adopted under the main survey. The procedure for integrating the estimates based on the drop complex approach is given in Annexure II.

2.9 The additional sample size due to the special crops will result in additional cost. A reasonable addition in sample size for each special crop may be ever; this may be viewed in the context of the performance of estimates.

Precision of Estimates

2.10 It is important to work out the precision of the estimates on a regular basis. This will help in monitoring the sample sizes in different zones of various states. This continuous monitoring will be of immense use, particularly, when a fresh sample is to be selected after three-year period. The calculation of standard errors provides guidelines to monitor the plan of work on a regular basis.

Methodological Issues

2.11 The Committee examined the costing procedures presently followed under the cost of cultivation scheme. It also considered various alternative procedures for valuing/imputing the different cost items. It is of the opinion that under the changed agricultural situation the procedure needs to be changed in respect of certain items.

Valuation of Human Labour

2.12 Human labour used in farming is of two types: (a) family labour and (b) hired labour. The latter, in turn, is of two types: (a) attached labour and (b) casual labour. The payments made to the hired labour, both attached and casual, are the direct costs, while family labour charge is an imputed cost.

Hired Labour

2.13 Exercises based on the data from the cost of cultivations schemes reveal that the weighted average wage rate actually paid to casual labour in most of the states is higher than the statutory minimum wages (Statement I). This may partly be due to the delayed review of statutory wage rates. This implies that if casual hired labour is valued on the basis of the prevailing statutory minimum wage instead of ruling market wage, the wage cost would show up to be substantially lower.

2.14 The Committee has examined the issue whether the labour input should be valued on the basis of statutory minimum wage where such wage is higher than the ruling market wage. It may be noted in this context that under the existing method of collection of data on cost of production, the actual wage paid to the labour is recorded. Thus, where statutory minimum wages are enforced leading to the actual payment of such wages by the farmers, they got recorded accordingly under the existing method. Therefore, the enforcement of statutory minimum wages will simultaneously benefit the laborers as well as compensates the farmers.

2.15 On the other hand, the decision to value labour on the basis of statutory minimum wages, regardless of whether they are actually enforced or not, will lead to anomalous situations. Once it gets known that the statutory minimum wages are

made the basis for estimating the cost of production, even when they are not enforced, there will be unhealthy pressure for artificially jacking up statutory wages and there can even be competitive bidding between different states for showing 'higher' cost of production in the expectation of getting higher prices for output. In such a situation, the will biggest losers will be the farm labourers. They will lose on both counts by not getting the statutory minimum wage in the first instance and by having to pay higher prices for food grains on account of the artificially rising cost of production. Needless to say, the artificially rising costs and prices will have several adverse consequences on the economy as a whole.

2.16 In countries where cost of cultivation is taken into account for price fixation, the practice everywhere is to adhere to the basis of the factual and objective method of computing costs on the basis of the actual cost incurred on hired factors. Owned inputs of farmers are valued on the basis of the rates for the comparable hired factors. Among other things, the practice serves to preserve the scientific value of data collected.

2.17 Rational procedure for fixation of statutory minimum wages and their effective enforcement for the two pre-requisites for benefiting the agricultural labour as well as for compensating the farmers, is beyond the purview of this Committee to go into these issues. We understand, however, that the National Commission on Rural Labour is examining these issues in depth with a view to making appropriate recommendation to the Government.

2.18 The Committee recommends that the casual hired labour may continue to be valued on the basis of the actual wages paid for different operations whether they are market wages or the statutory minimum wages. As noted in para 2.13 the weighted average wage rate actually paid to casual labour most of the states is higher than the statutory minimum wages.

2.19 While fixing procurement /minimum support prices, there is usually a time-lag in the availability of cost data. Those cost data are updated on the basis of the index numbers of input prices. Besides, the Commission for Agricultural Costs and Prices (CACP) holds extensive discussions with representatives of various sections in different states before taking a view on the latest position in regard to these prices. We recommended that the CACP may specifically assess the latest position every year in regard to the rise in wages including the enforcement of minimum wages in different parts of the country on the basis of their discussions with various sections and take this into account while using the input index for recommending procurement/minimum support prices.

Family Labour

2.20 As regards family labour, the present practice under the cost of cultivation scheme is to evaluate it at the rates paid to the attached labour. On the basis of the actual number of days worked in a year by the attached labour, the wage cost per day including perquisites is estimated and used for evaluation family labour. The wage cost per day for attached labour turns out to be significantly lower than both the casual labour wage and statutory minimum wage rate (Statement II).

2.21 We need not discuss the possible reason for the lower cost of attached labour when compared to the casual labour. It is, however, important to note, for the purposes of this Report, the declining importance of attached labour input and increasing casualisation of farm labour. In most cases, the input from attached labour does not exceed 10 percent of total labour input on the farm, where as casual labour and family labour each account for a substantial proportion of total labour input (statement III) Moreover, the wage for casual labour reflects the market conditions of supply and demand for labour in each season including the skills of labour for the concerned

operation. For the family labour engaged in any operation on one's own farm, it is more reasonable to assume its cost to be the same as for the casual labour because much of the family labour belonging to the small and marginal farms in fact works as casual labour on other farms at the going wage rates. Thus, what is family labour for one farm may be casual labour for another farm and vice versa.

2.22 The Committee therefore recommends that the existing practice of valuing family labour on the basis of the wage for attached labour should be done away with and it should be valued on the basis of the actual wage rates for casual labour. This change in method would raise the wage cost substantially, resulting in a rise in the total cost (Statement IV)

Management as an Item of Cost

2.23 Managerial function involves procurement and allocation of inputs and supervision of labour etc. Entrepreneurial function, on the other hand, relates to decision-making regarding the crops to be grown and the inputs and technology to be used under uncertainty about yield and prices. It is recognized that management input is an item of cost which should be accounted for, whereas the entrepreneurial function is rewarded in terms of profit which is the residual after deducting all the costs including the cost of management from the value of output.

2.24 The data collected under the cost of cultivation scheme does not adequately account for the managerial effort of the farmers. In the opinion of the Committee, it would be difficult to collect data to management input, as paid managers are rarely to be found, and the labour input of the family for farm operations is inextricably combined with management.

2.25 As a practical way out, it would be reasonable to assume, on the basis of the available data on family labour input, that the head of the family would be putting in about half of this labour. For the management function performed, it would be fair to raise the value of labour input of the head of the family by 50 percent. Our calculations based on the data collected under the cost of cultivation scheme show that management input so valued would work out to about 10 percent of paid out costs.

2.26 Since management services are needed mainly for procurement and allocation of inputs and the supervision of hired labour, the Committee recommends that paid-out costs may be raised by 10 percent on account of management input and a separate cost (Cost C_8) be computed by adding this component.

2.27 We are recommending a simple and uniform method of raising the paid-out costs by a certain percentage for estimating a separate cost (Cost C_8) rather than raising the value of the labour input of the head raising the value of the labour input of the head of the family. This is because identifying the labour put in by the head of the family separately for each farm is a cumbersome procedure involving considerable extra effort which can be avoided. Besides, our recommendation regarding valuation management input is based upon certain plausible assumptions rather than on the specific information on the actual input of management which in any case, would be difficult to identify. We therefore, feel that the existing classification of costs should be retained as much and a new cost (Cost C_8) be derived by including estimates on account of management input.

2.28 The Committee's recommendations regarding the valuation of family labour input (para 2.22) and management input (para 2.26) would result in raising the total cost of production.

The combined impact of those two recommendations on the cost of production is instated in Statement V.

Imputation of Rental Value of Owned Land

2.29 So far as rental value of owned land is concerned the choice is between two methods of valuation of services of land: (a) interest on the value of land and (b) contract rent for similar land which is the charge at which the services of land are transacted in the market.

2.30 Exercises carried out by the Committee on the data available from cost of cultivation scheme show that the objective determination of economic value of land is very difficult. Prices reported by farmers are subjective with high incidences of speculative and non economic elements. In any case the land transactions are rare and therefore the recorded values are neither real nor representative.

2.31 The only other objective method open is the contract market rent for similar land. Examination of the data available reveal that the practice of renting is decreasing over time. For the country as a whole it may be around 6 percent. The low incidence apart the recorded rents are highly variable. It is possible that the acute scarcity of land has introduced the speculative element in land-lease market also. Further-more, in many states leasing is prohibited by law or is permitted in case of specified categories.

2.32 The Special Expert Committee had observed that, "imputing the rent of owned land on the basis of market rent is the most appropriate procedure." However faced by the difficulties stated in para 2.31 the actual practice followed under the scheme is to limit the rent of owned land as reported by the farmers to the maximum as defined in the state legislations of the concerned

state. The reported rental is generally the value that the farmer reports he may realize if the land was leased out.

2.33 The Expert Committee has considered the various alternative available in this regard. It has also noted the recommendation of the Special Expert Committee that rent of owned land be imputed on the basis of market rents or a five years average of the actual rent paid.

2.34 Existing method followed under the Comprehensive Scheme has two limitations. The first related to the farmers' assessment of the rental value of his own land which is subjective and the second the use of the legal maximum as the cut-off point. The Committee is in favour of adopting an objective method in this regard. It is suggested that additional information on rent of irrigated and un-irrigated lease-in / out plots may be collected crop-wise from all the farmers on a complete enumeration basis in the villages in clusters already selected. Information on value of output raised on these plots may also be collected. The ratio of rent to gross value of output for each crop, irrigated un-irrigated, may then be used for determining the rental value for the sample farmer. The exercise may be repeated when a new sample drawn after every three years.

Transportation of Farm Produce

2.35 Transportation of farm produce to the market/ mandi is at present not treated as an item of cost of cultivation. Criticism of this practice arises due to failure to distinguish between the production process and the distribution process. The unit cost of production is computed at the farm level. It does not involve cost of disposal / marketing of produce. The Committee therefore, reiterates the view of the Special Expert Committee that transport costs become relevant only if the farm produce is procured / sold outside the

village in which case CACP should while recommending procurement minimum support price take these costs into consideration.

Interest Rates

2.36 Interest on fixed capital is presently charged at the debenture rate. The Special Expert Committee has observed that in view of proportion of non-institutional credit being still substantial and its interest rate being much higher a weighted average interest rate be computed from the survey itself. This recommendation has not been implemented so far. The same is the case with the length of period for charging interest on working capital. The Committee recommends that weighted interest rates be computed and be revised every five year.

Apportionment of Cost and Allocation of Joint Cost

2.37 The Expert Committee has examined procedure being followed under the Comprehensive Scheme for apportionment, and between constituents of crop-mixture, and between the main product and by-product and for allocation of joint costs between individual crop enterprises. The Committee notes that the procedure followed under the scheme with regard to apportionment of costs between the constituents of the crop mixtures and between the main product and by-products conforms to the recommendation of the Special Expert Committee. It suggests that the other recommendation of the Committee related to allocation of joint costs should also be implemented at the earliest.

SECTION III TERMS OF TRADE BETWEEN AGRICULTURAL AND NON-AGRICULTURAL SECTORS

The Concept

3.1 The concept 'Terms of Trade' measures the overall rate of exchange at which trade takes place

between two countries or two sectors. Used in the context of between the agricultural and non agricultural sectors the term represents relationship between the prices received by the farmers relationship between the prices received by the farmers for their produce and prices paid for the goods purchased by them for intermediate consumption, capital formation and final consumption. The ratio between the indices of prices received and prices paid by the farmers shows the overall rate of exchange between agricultural and non-agricultural sectors.

3.2 In India many variants of this concept have been used from time to time. However, the controversy about the method of consumption and its use still persists in economic literature.

Terms of Reference of the CACP

3.3 After the revision of terms of reference of the CACP in 1980 to consider among other things, terms of trade between agricultural and non-agricultural sectors while recommending procurement/minimum support prices the Commission developed its own methodology for constructing the index numbers of sectoral term of trade. The list of representative commodities purchased and sold by the agricultural sector, along with the weights assigned to each for constructing indices of prices received and prices paid is given in Statement VI. The index numbers of sectoral terms of trade development are given in Statement VII

Review of Terms of Trade

3.4 All examination of the terms of trade series reveals that the terms of trade were favorable to agriculture only for about 3 years in early seventies. After 1974-75, the terms of trade generally deteriorated and went against the farm sector. The index dipped to its lowest point in 1985-86. It shows some recovery after that year. But even in

1988-89 the Index number of terms of trade stood almost around the same level at which it was in 1980-81.

3.5 The fact that the terms of trade, as revealed by the indices prepared by the CACP according to its own methodology have, in general, remained adverse to the agricultural sector for about a decade and a half is a matter of serious concern. The mitigating factor has been the rising productivity in agriculture as a result of investments made by the Government in expanding irrigation facilities, in improving infrastructure facilities in research and extension services and for delivery system of inputs including marketing and price support operations.

Impact on Farmer's Income

3.6 Gains in productivity during the eighties would have raised farm incomes substantially if the terms of trade had not deteriorated during the decade. Deterioration of terms of trade, however implies that part of the productivity gains were passed on to the consumer.

3.7 In this context a notable fact is the decline in the average size of holdings to the extent of about 15 per cent during the last decade. Thus in spite of the increase in productivity in agriculture by about 20 percent in the eighties the unfavorable terms of trade and decline in average size of farm holdings resulted in stagnation in per capita income in the agricultural sector (Statement VIII).

Construction of Index Numbers of Terms of Trade

3.8 In the index used by the Commission for Agricultural Costs and Prices the basket of goods purchased by farmers does not include items like seed, manure, feeds and fodder, wages paid to

agricultural labour, etc. Similarly items of agricultural produce purchased for family consumption are also excluded. The exclusion of these items obviously leads to a different weighting diagram and would not show the real picture.

3.9 With the adoption of modern technology of high yielding dwarf and hybrid varieties of major crops quite a substantial part of seed is also purchased by the farmers,. Share of modern inputs like insecticides/pesticides, electricity, water, etc., in the total purchases made by the farmers has increased substantially. Similarly, there is substantial change in the production pattern and output-mix in the agricultural sector in recent years. It would, therefore, be desirable to examine the composition of input structure and output mix in the agricultural sector with a view to assigning appropriate weight to each of the items/commodities purchased and sold by the farmers.

Lack of Retail Price Data

3.10 For construction of indices of prices paid by the farmers, for commodities purchased for final or intermediate consumption, the retail prices are the appropriate yardstick. However, retail price indices for individual items are not available at the state or all India level. Alternatively wholesale price indices are being used assuming that the movement of these would reflect the trend of retail prices. This may or may not be the case as there is no fixed lead and lag relationship between wholesale and retail prices. The Committee therefore feels that efforts should be made to construct the indices of retail prices as well on the pattern of wholesale prices.

An Index of Terms of Trade

3.11 Indices of terms of trade for various countries are being reported by the FAO. The method of construction of these indices varies between countries. For some countries the ratio represents the relationship between price received by

farmers and prices paid by them for the goods used in production. But for other countries the denominator consists of items of production as well as consumption.

3.12 This Committee did not have enough time to go into the complexities of constructing fresh weighting diagrams and to develop an appropriate methodology for constructing the index numbers of terms of trade that would be in line with the needs of the farming community in India. The Committee, therefore, recommends that a Task Force may be constituted by the Ministry of Agriculture to look into the problem in its entirety and develop the methodology for constructing the index numbers of terms of trade.

Use of Terms of Trade Index Numbers

3.13 Terms of trade index number, how so ever it may be constructed, is useful for observing the trend in the relative purchasing power of the agricultural sector. In a largely rain fed country like India, agricultural production shows large year-to-year fluctuations. Despite orderly marketing and buffer stock operations, these fluctuations are bound to have their impact on relative prices. Hence it is the long term trend and not the year-to-year variations in index number of terms of trade that should be kept in view.

3.14 The Committee does not favour any automatic linkage of terms of trade index with the procurement / minimum support prices. Corrective measures may have to be taken if the terms of trade for the agricultural sector are persistently unfavorable. The magnitude of correction should be decided by the price fixation authority after a careful study of the trend, the demand and supply position and the movement of prices in the international market, etc.

3.15 The Committee recommends that once the methodology for construction of the index num-

bers of terms of trade is decided the index numbers may be prepared by the Directorate of Economics and Statistics and published regularly.

SECTION IV

ADJUSTING PROCUREMENT/MINIMUM SUPPORT PRICES FOR THE RISE IN COSTS OF INPUTS, DURING THE PERIOD INTERVENING THE ANNOUNCEMENT OF THE PROCUREMENT /MINIMUM SUPPORT PRICES AND THE ARRIVAL OF THE CROP IN THE MARKET

4.1 The Procurement/minimum support prices are announced before the sowing season. By the time the crop is harvested and reached the market, the price regime may undergo change.

4.2 During the intervening period, the costs of farm inputs like those of labour, seed, fertilisers, pesticides, electricity, diesel, etc., may rise. Paid-out costs being an important rise in input costs would adversely affect farm profits.

4.3 There are two ways of adjusting procurement/minimum support price for the rise in costs of inputs during the intervening period. One way while announcing the procurement/ minimum support prices and the other is to revise the prices at the time of the arrival of the crop in the market in the light of the observed rise in input costs. Even though the first method may not be able to accurately predict the likely rise in inputs costs, it has the merit of providing incentives to the farmers for the adequate use of inputs when their prices rise. The second method, on the other hand, seeks to compensate the farmers for the observed rise in the costs of inputs but may fail to prevent the restriction of input-use on account of the rise in their prices.

4.4 During its discussions with the Commission for Agricultural Costs and Prices (CACP), the Committee was informed that before arriving at decisions on procurement/minimum support prices, they undertake exercises necessary for projecting input costs upto the end of the crop season and take this into account while making their recommendations.

4.5 The Committee was also informed that in the of unusual changes in farm costs, the Commission present revised Reports to the Government.

4.6 The Committee is in favour of the existing practice of taking into account the expected rise in input costs in the intervening period while announcing procurement/ minimum support price before the commencement of the sowing season. After all, the very rationale for announcing such prices before the sowing season is to provide incentive to the farmers for investment in inputs. However, this may not fully account for unanticipated changes in input prices. The Committee, therefore, recommends that CACP, as a rule, should have a second look at the adjust the procurement/ minimum support price, in case the observed rise in input costs turns out to be higher than the anticipated rise.

4.7 The Commission does not publish the methodology including the weighting diagram used in the construction of the indices to project the cost/price situation upto the harvest time in their Reports.

4.8 The Committee recommends that the methodology including the weighting diagram and the index numbers used by CACP be published in their Reports.

SECTION V. ARRANGEMENTS FOR A MORE EFFECTIVE IMPLEMENTATION OF THE COMPREHENSIVE SCHEME

5.1 The Expert Committee has examined the existing arrangements for the collection, proceeding and analysis of data under the Comprehensive Scheme. It has noted that that these arrangements are not adequate for meeting the demands made on the scheme.

5.2 The Committee notes that even after two decades of the implementation of the scheme, it is still performing a service function of providing cost estimates to CACP. The research function got completely neglected.

5.3 The modified scheme proposed by Special Expert Committee had emphasized the research component and, for that purpose, it had suggested construction of a series of indices including index numbers of farm business income and input-output analysis to be published in annual reports. This was expected to generate a national debate on crucial constraints faced by agriculture in the various regions and obtain policy feedback from a vibrant research community.

5.4 The Expert Committee feels that in a changing agricultural scenario, the voluminous data collected should be effectively used to meet the demands made by various organizations for research findings to go as input policy formulation.

5.5 Following the recommendations of the Special Expert Committee, the number of cost estimates have now increased to 120 which is nearly 3 times the requirements envisaged earlier.

In addition, data flow too has increased from about 6000 holdings to about 9000 holdings. The requirements of analysis have, therefore, become much more rigorous now. That apart, demands for information based on cost collected under the scheme have also been increasing. Planning Commission, Central Statistical Organisation, Bureau of Costs and Prices, Institutions/Universities, etc., are now seeking information relating to various aspects of farm economy. Unless therefore, the Central Analytical Unit in the Directorate of Economics and Statistics is adequately strengthened, the overall effort will continue to remain inadequate resulting in mounting backlog of work.

Staff Requirement

5.6 The Committee has taken as overall view of existing staff and the additional requirements

of Central Analytical Unit. These are given in Annexure III. An Organisational chart for the Central Analytical Unit has been given in Annexure IV. It is here that this will help in meeting the various demands on the Scheme for economic analysis and farm policy research, in addition to making cost estimates available to the CACP.

5.7 The staff already sanctioned for the state however, appears to be adequate.

Sd/-
(C.H Hanumantha Rao)

Sd/-
(D.S. Sidhu)

Sd/-
(V. Rajagopalan)

Sd/-
(Prem Narain)

Sd/-
(S.P. Pant)

STATEMENT I
WAGES OF AGRICULTURAL WORKERS: CASUAL & STATUTORY (1986-87)

(In Rs./Day)

State/Crop	Casual Labour Wage (Based on cost Data)	Statutory Minimum Wage Rate
(1)	(2)	(3)
ANDHRA PRADESH		
Paddy	15.04	
Jowar	10.56	8.50-14.00 (1986)
Groundnut	11.20*	
Sugarcane	17.20	
ASSAM		
Jute	12.48	12.50 (1986)
HARYANA		
Paddy	18.88	
Bajra	23.68	
Sugarcane	17.76	14.11 (1986)
Rape & Mustard	19.44	
Wheat	23.68	
GUJARAT		
Bajra	13.44	
Groundnut	13.36	11.00 (1986)
Cotton	10.64	
KARNATAKA		
Paddy	12.32	
Jowar	14.72	9.50-14.00 (1985)
Cotton	8.24	
Sugarcane	14.64	
PUNJAB		
Paddy	17.20	
Wheat	20.96	14.60 (1982)
Cotton	17.52	
RAJASTHAN		
Bajra	14.16	
Maize	11.20	
Wheat	13.92	
Barley	13.60	11.00 (1985)
Rape & Mustard	14.16	
TAMIL NADU		
Paddy	14.48	
Ragi	11.20	
Groundnut	11.20	8.00-11.00 (1986)
Cotton	9.84	
UTTAR PRADESH		
Paddy	8.96	
Wheat	17.76	
Barley	11.20	
Gram	10.48	
Arhar	10.24	12.00 (1987)
Rape & Mustard	9.60	
Sugarcane	9.92	
WEST BENGAL		
Paddy	12.48*	
Jute	12.72	11.70 (1985)

* Relates to 1985-86

STATEMENT II
WAGES COST PER DAY FOR ATTACHED LABOUR, CASUAL LABOUR AND STATUTORY MINIMUM WAGE
RATE (1986-87)

(In Rs./Day)

State/Crop	Based on cost Data		Statutory Minimum Wage Rate
	Attached Labour Wage	Casual Labour Wage	
(1)	(2)	(3)	(4)
ANDHRA PRADESH			
Paddy	5.92	15.04	
Jowar	5.60	10.56	8.50-14.00 (1986)
Groundnut	5.36*	11.20*	
Sugarcane	5.68	17.20	
ASSAM			
Jute	12.48	12.48	12.50 (1986)
HARYANA			
Paddy	9.84	18.88	
Bajra	10.56	23.68	
Sugarcane	11.76	17.76	14.11 (1986)
Rape & Mustard	9.84	19.44	
Wheat	10.72	23.68	
GUJARAT			
Bajra	10.08	13.44	
Groundnut	8.00	13.36	11.00 (1986)
Cotton	11.04	10.64	
KARNATAKA			
Paddy	7.36	12.32	
Jowar	6.40	14.72	9.50-14.00 (1985)
Cotton	7.60	8.24	
Sugarcane	4.88	14.64	
PUNJAB			
Paddy	11.60	17.20	
Wheat	12.72	20.96	14.60 (1982)
Cotton	15.76	17.52	
RAJASTHAN			
Bajra	9.92	14.16	
Maize	8.08	11.20	
Wheat	9.60	13.92	11.00 (1985)
Barley	9.12	13.60	
Rape & Mustard	11.12	14.16	
TAMIL NADU			
Paddy	9.52	14.48	
Ragi	6.40	11.20	8.00-11.00 (1984)
Groundnut	10.32	11.20	
Cotton	8.64	9.84	
UTTAR PRADESH			
Paddy	9.92	8.96	
Wheat	11.52	17.76	
Barley	8.24	11.20	
Gram	8.64	10.48	12.00 (1987)
Arhar	10.08	10.24	
Rape & Mustard	9.04	9.60	
Sugarcane	14.80	9.92	
WEST BENGAL			
Paddy	9.84*	12.48*	11.70 (1985)
Jute	10.56	12.72	

* Relates to 1985-86

STATEMENT III
LABOUR USE PER HECTARE@ ON CROP PRODUCTION
(Percentage Distribution)

(1986-87)

State	Crop	Total Days	Percentage		
			Family	Attached	Casual
(1)	(2)	(3)	(4)	(5)	(6)
ANDHRA PRADESH	Paddy	160.85	30.11	7.77	62.11
	Groundnut	86.17	35.53	9.49	54.98
	Sugarcane	224.06	12.77	12.50	74.73
ASSAM	Paddy	76.97	69.56	15.36	15.08
	Jute	160.45	53.26	15.39	31.56
GUJARAT	Bajra	75.35	57.87	5.80	36.33
	Groundnut	69.78	50.98	12.37	36.66
	Cotton	79.52	40.59	13.88	45.53
HARYANA	Wheat	50.29	63.06	18.92	18.01
	Paddy	87.45	43.46	12.86	43.68
	Sugarcane	112.96	68.96	12.26	18.78
KARNATAKA	Paddy	110.88	38.00	2.54	59.46
	Sugarcane	166.57	29.00	3.69	67.31
	Cotton	57.85	37.32	3.64	59.04
MADHYA PRADESH	Wheat	47.39	68.31	7.21	24.48
	Paddy	72.03	49.72	9.19	41.09
	Cotton	83.31	51.74	9.38	38.88
MAHARASHTRA	Bajra	60.53	43.11	4.40	52.49
	Jowar	63.65	39.38	4.80	55.83
	Sugarcane	297.13	29.56	8.14	62.30
	Cotton	74.20	34.40	7.60	57.99
ORISSA	Paddy	129.51	39.22	14.39	46.39
	Jute	204.22	48.29	10.06	41.65
PUNJAB	Wheat	52.68	50.00	12.63	37.38
	Paddy	101.33	38.03	4.45	57.53
	Cotton	114.90	53.51	14.56	31.92
RAJASTHAN	Wheat	64.33	83.07	3.62	13.31
	Gram	27.46	86.06	2.71	11.23
	Rape & Mustard	43.12	88.98	1.75	9.27
TAMIL NADU	Paddy	161.74	26.74	7.83	65.43
	Jowar	50.30	31.67	2.20	66.13
	Groundnut	112.19	25.83	3.43	70.74
	Cotton	175.66	23.25	4.69	72.07
UTTAR PRADESH	Wheat	71.98	64.24	2.97	32.75
	Paddy	107.28	58.28	2.18	39.54
	Gram	61.12	74.73	2.61	22.66
	Rape & Mustard	59.79	72.21	3.03	24.76
WEST BENGAL	Paddy	140.55	46.55	6.26	47.19
	Jute	186.06	48.80	5.71	45.49

@ Estimates are provisional

* Data relate to 1985-86

STATEMENT IV
IMPACT OF EVALUATING FAMILY LABOUR COST AT CASUAL LABOUR RATES ON TOTAL WAGE BILL AND
COST OF PRODUCTION OF CROPS (PER CENT)

(1986-87)

Crop	State	Impact on Total Wage Bill	Impact on Cost of Production
(1)	(2)	(3)	(4)
PADDY	Andhra Pradesh	22.86	6.42
	Haryana	22.87	5.78
	Karnataka	13.64	3.45
	Madhya Pradesh	20.70	5.02
	Orissa	6.90	2.43
	Punjab	9.41	1.79
BAJRA	Gujarat	5.97	1.78
	Rajasthan	23.63	6.87
	Uttar Pradesh	3.47	1.09
JOWAR	Andhra Pradesh	26.75	5.94
	Karnataka	1.18	0.28
	Madhya Pradesh	9.04	2.24
	Tamil Nadu	15.92	3.00
WHEAT	Haryana	57.88	8.24
	Madhya Pradesh	16.78	2.83
	Rajasthan	27.53	4.55
	Uttar Pradesh	14.56	2.90
GRAM	Haryana	39.88	7.43
	Madhya Pradesh	22.72	4.08
	Rajasthan	34.17	5.97
	Uttar Pradesh	6.61	1.43
URAD	Andhra Pradesh	25.95	5.59
	Madhya Pradesh	14.24	3.76
	Orissa	18.78	4.02
	Tamil Nadu	5.16	1.33
	Uttar Pradesh	15.59	4.66
GROUNDNUT	Gujarat	7.02	1.27
	Orissa	5.41	1.61
	Tamil Nadu	6.06	1.52
RAPE & MUSTARD	Haryana	36.55	5.31
	Rajasthan	18.14	3.42
	Uttar Pradesh	17.79	3.81
COTTON	Gujarat	8.38	2.06
	Karnataka	12.30	2.72
	Madhya Pradesh	25.39	5.78
	Maharashtra	0.61	0.18
	Punjab	5.57	1.98
	Tamil Nadu	3.73	1.05
JUTE	Assam	5.66	2.97
	Orissa	6.56	3.33
	West Bengal	10.76	5.34
SUGARCANE	Andhra Pradesh	9.41	2.20
	Haryana	31.56	7.98
	Karnataka	11.27	2.25
	Maharashtra	8.89	2.53

STATEMENT V
IMPACT OF EVALUATING FAMILY LABOUR AT WAGE RATES FOR CASUAL LABOUR AND INCLUSION OF
MANAGERIAL COST ON COST OF PRODUCTION (PER CENT)

(1986-87)

Crop	State	Percentage Impact on Cost of Production		
		Family Labour Evaluated at Casual Rates	Management Cost @ 10% of the Paidout Cost	Total Impact
(1)	(2)	(3)	(4)	(5)
PADDY	Andhra Pradesh	6.42	6.15	12.57
	Haryana	5.78	6.29	12.07
	Karnataka	3.45	5.41	8.86
	Madhya Pradesh	5.02	5.36	10.38
	Orissa	2.43	5.70	8.13
	Punjab	1.79	6.45	8.24
BAJRA	Gujarat	1.78	5.86	7.64
	Rajasthan	6.87	3.38	10.25
	Uttar Pradesh	1.09	4.79	5.88
JOWAR	Andhra Pradesh	5.94	5.10	11.04
	Karnataka	0.28	5.35	5.63
	Madhya Pradesh	2.24	4.89	7.13
	Tamil Nadu	3.00	3.65	6.65
WHEAT	Haryana	8.24	6.10	14.34
	Madhya Pradesh	2.83	5.28	8.11
	Rajasthan	4.55	5.47	10.02
	Uttar Pradesh	2.90	6.01	8.91
GRAM	Haryana	7.43	3.99	11.42
	Madhya Pradesh	4.08	5.15	9.23
	Rajasthan	5.97	4.65	10.62
	Uttar Pradesh	1.43	4.79	6.22
URAD	Andhra Pradesh	5.59	5.35	10.94
	Madhya Pradesh	3.76	4.66	8.42
	Orissa	4.02	4.54	8.56
	Tamil Nadu	1.33	7.22	8.55
	Uttar Pradesh	4.66	3.55	8.21
GROUNDNUT	Gujarat	1.27	6.37	7.64
	Orissa	1.61	5.11	6.72
	Tamil Nadu	1.52	2.21	3.73
RAPE & MUSTARD	Haryana	5.31	4.56	9.87
	Rajasthan	3.42	3.76	7.18
COTTON	Gujarat	2.06	6.82	4.76
	Karnataka	2.72	5.76	8.48
	Madhya Pradesh	5.78	5.21	10.99
	Maharashtra	0.18	6.96	7.14
	Punjab	1.98	5.16	7.14
	Tamil Nadu	1.05	4.89	5.94
JUTE	Assam	2.97	4.90	7.87
	Orissa	3.33	4.82	8.16
	West Bengal	5.34	5.31	10.65
SUGARCANE	Andhra Pradesh	2.20	5.43	7.63
	Haryana	7.98	5.07	13.05
	Karnataka	2.25	4.48	6.73
	Maharashtra	2.53	6.54	9.07

STATEMENT VI
TERMS OF TRADE LIST OF COMMODITIES PURCHASED AND SOLD BY AGRICULTURAL SECTOR

Commodities Purchased			Commodities Sold		
For Final Consumption		Weight	For Final Consumption		Weight
(1)	(2)	(3)	(4)	(5)	(6)
1.	Cycles	0.64	1.	Cereals/Substitutes	
2.	Paper and Paper Products	4.34	2.	Wheat	10.28
3.	Tanned, Cured & Finished Leather	1.78	3.	Jowar	1.91
4.	Tobacco (Manufacture)	8.30	4.	Bajra	1.28
5.	Textiles	19.92	5.	Maize	1.00
6.	Drugs & Medicines	4.34	6.	Barley	0.27
7.	Cosmetics, Soap and Detergents	6.66	7.	Paddy/Rice	19.81
8.	Metal Products	0.65	8.	Gram	3.93
9.	Utensils	1.28	9.	Milk and Mil Product	10.60
10.	Edibal Oil	9.54	10.	Meat and Meat Product	3.44
11.	Sugar	3.78	11.	Fruits and Vegetables	6.14
12.	Salt	0.62		Gur	1.04
13.	Kerosene	3.07			
14.	Matches	0.27			
15.	Electricity	0.27			
16.	Coal	0.27			
17.	Services	6.83			
		72.56			59.70
For Intermediate Consumption			For Intermediate Consumption		
18.	Fertiliser	7.36	12.	Oilseeds/Others	
19.	Services & Repairs	2.77	13.	Groundnut	10.66
20.	Electricity	1.21	14.	Rapeseed/Mustard	4.14
21.	Insecticides	0.83	15.	Linseed	1.25
22.	Diesel (HS)	4.26	16.	Sesamum	1.32
23.	Oil Cakes	1.76	17.	Castorseed	0.32
24.	Drugs & Medicines	0.48	18.	Jute	3.03
			19.	Cotton	8.76
			20.	Sugarcane	7.53
			21.	Tobacco	2.71
				Ruber	0.58
		18.67			40.30
For Capital Formation					
25.	Cement	0.21			
26.	Lime	0.42			
27.	Transport Equipment	0.62			
28.	Machinery & Ferro Alloy	0.38			
29.	Iron, Steel and Ferro Alloy	0.21			
30.	Logs & Timer	1.32			
31.	Agriculture Pow	4.90			
32.	Bricks & Tiles	0.71			
		8.77			

STATEMENT VII
INDICES OF PRICES RECEIVED AND PRICES PAID BY THE FARMERS AND TERMS OF TRADE
(Triennium ending 1971-72=100)

Year	Commodities sold for			Prices paid for commodities purchased for				Terms of Trade
	Final consumption	Intermediate consumption	All Consumption	Final consumption	Intermediate consumption	Capital formation	All Uses	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1970-71	98.8	102.9	100.5	100.6	100.3	100.2	100.5	100
1971-72	102.7	102.1	102.5	105.7	101.6	107.8	105.1	97
1972-73	115.3	119.2	116.9	113.2	109.6	117.2	112.9	103
1973-74	145.0	144.9	145.0	133.6	126.3	134.3	132.3	109
1974-75	178.0	150.2	166.8	162.3	188.1	159.5	166.9	100
1975-76	153.4	126.2	142.4	159.4	193.1	188.9	168.3	84
1976-77	151.8	164.7	157.0	166.0	191.5	194.3	173.2	90
1977-78	163.9	166.1	164.8	177.3	193.6	191.6	181.6	90
1978-79	157.2	157.0	157.1	180.7	185.1	207.8	183.9	85
1979-80	179.0	194.9	185.4	209.5	191.0	246.2	209.3	88
1980-81	202.2	230.6	213.6	233.3	255.0	317.9	244.8	87
1981-82	216.6	235.4	224.2	249.1	296.4	392.5	270.5	82
1982-83	230.8	246.7	237.2	254.5	308.2	429.1	279.9	84
1983-84	253.0	273.2	262.1	278.4	325.6	454.2	302.6	86
1984-85	265.3	293.9	276.8	298.1	328.8	503.2	321.8	86
1985-86	282.4	271.5	278.0	313.2	343.3	524.5	337.4	82
1986-87	311.0	327.9	317.8	337.3	368.6	542.5	361.2	88
1987-88	329.7	380.7	350.3	382.7	387.5	574.7	400.5	87
1988-89(P)	371.1	367.7	369.7	402.5	390.5	652.7	422.2	87

(P): Provisional

STATEMENT VIII
NET VALUE ADDED FROM CROP PRODUCTION DURING 1980-81 TO 1987-88

Year	Number of Land Holdings (Million Nos.)	Value Added from Crop Production (Rs. Crores)	Gross Sown Area (Million Hectares)	Crop Production (Rs.)	
				Per Hectare	Per Holding
(1)	(2)	(3)	(4)	(5)	(6)
1980-81	88.90	46278	172.64	2681	5206
1981-82	90.60	48872	177.10	2760	5394
1982-83	92.32	47999	173.73	2763	5199
1983-84	94.08	52730	180.77	2917	5605
1984-85	95.87	52421	176.42	2971	5468
1985-86	97.70	52208	178.83	2919	5344
1986-87	99.56	51175	176.92	2893	5140
1987-88	101.45	50746	N.A.	-	5002

Annexure I.

THE PRESENT STATUS OF THE COMPREHENSIVE SCHEME AND PROCEDURES ADOPTED FOR COMPUTING VARIOUS COSTS

The Comprehensive Scheme for Studying the Cost of Cultivation of Principal Crops was initiated in 1970 -71 on the recommendation of Technical Committee on Indices of Input Costs appointed by Government of India, The technical details of the Comprehensive Scheme were worked out by the Indian Agricultural Statistics Research Institute(formerly Institute of Agricultural Research Statistics)

2. The Special Expert Committee on Cost of Production Estimates, constituted by the Government of India in 1979, recommended the adoption of a crop complex approach to replace the single crop approach followed till that time. A modified cost classification was also suggested. These recommendations of the Special Expert Committee were implemented from 1981-82.

Sampling Design of the Scheme

3. The design of the scheme continues to be a three stage stratified random sampling design with tehsils as the first stage units, villages/clusters of villages as the second-stage units and holdings as the third and ultimate stage units. Each state is demarcated into homogeneous agro-climatic zones based on cropping pattern, soil types, rainfall, etc. The primary sampling units (tehsils) are allocated to different zones in proportion to the total area of all crops covered in the study. The primary sampling units are selected in each zone (stratum) with probability proportional to the area under the selected crops, and with replacement. Within each tehsil, the village/cluster is also selected following the same procedure. In each selected village/ cluster, all the operational holdings are enumerated and classified according to size into 4 to 5 size classes, the class limits being fixed uniformly for all villages/clusters. In each size class, two holdings are selected by simple random sampling, without replacement. However, if in any village/cluster a particular size class does not contain even two holdings, more holdings are selected from the other adjacent size classes to make up the deficit.

Crop Coverage

4. Cost estimates are currently being generated for the following 26 crops:

Paddy, Jowar, Bajra, Maize, Wheat, Ragi, Barley, Gram, Arhar, Moong, Urad, Cotton, Jute, Groundnut, Rapeseed & Mustard, Soyabean, Sunflower, Safflower, Sesamum, Linseed, Sugarcane, Onion, Potato, Ginger and Tapioca. A special study on the cost of cultivation of V. Tobacco is also being undertaken in Andhra Pradesh under the scheme.

Cost Items

5. The items of cost of cultivation cover both paid-out costs (out-of-pocket expenses) and the imputed costs. The items covered under these costs

Paid-out Costs:

- i) Hired Labour (human, animal and machinery)
- ii) Maintenance expenses on owned animal and machinery
- iii) Expenses on material inputs such as (home grown and purchased), fertiliser manure (owned and purchased), pesticide and irrigation.
- iv) Depreciation on implements and farm buildings (such as cattle sheds, machine sheds, storage sheds)
- v) Land revenue.
- vi) Rent paid for leased-in land

Imputed Costs:

Value of family labour, rent of owned and interest on owned fixed capital on which the farmer does not incur any expenses.

Cost Concepts

6. Costs are generated following certain cost concepts. These cost concepts and the items of cost included under each concept are given below:

Cost A1

- i) Value of hired human labour
- ii) Value of hired bullock labour
- iii) Value of owned bullock labour
- iv) Value of owned machinery labour
- v) Hired machinery charges
- vi) Value of seed (both farm produced, purchased)
- vii) Value of insecticides and pesticides
- viii) Value of manure (owned and purchased)
- ix) Value of fertiliser
- x) Depreciation on implements and farm buildings
- xi) Irrigation charges
- xii) Land revenue, cesses and other taxes
- xiii) Interest on working capital.
- xiv) Miscellaneous expenses (Artisans, etc)

Cost A₂

Cost A₁+rent paid for leased-in land.

CostB₁

Cost A_1 + interest on value of owned fixed capital assets (excluding land) **Cost C_2**

Cost B_2 + imputed value of family labour

Cost B_2

Cost B_1 + rental value of owned land (net of land revenue) and rent paid for leased-in land

Cost C_1

Cost B_1 + imputed value of family labour

Imputation Procedures

7. Some of the inputs used in the production process come from family sources. The process comes from family sources. The procedures adopted for deriving imputed values of these inputs are as under:

Item	Procedure
(1)	(2)
1. Family labour	On the basis of wages paid to attached farm servant.
2. Owned animal labour	On the basis of cost of maintenance, which includes the following: (a) Cost of green and dry fodder. (b) Cost of concentrates (c) Depreciation on animals, and cattle sheds (d) Other expenses, if any
3. Owned machinery charges	On the basis of cost of maintenance of farm machinery which includes diesel, electricity lubricants, depreciation, repairs and other expenses, if any
4. Implements	Depreciation and charges on account of minor repairs.
5. Farm produced manure	evaluated at rates prevailing in the village.
6. Rent of owned land	Estimated on the basis of prevailing rents in the village for identical type of land, or as reported by the sample farmers subject to the ceiling of fair rents given in the land legislation of the concerned state.
7. Interest on owned fixed capital	Interest on present value of fixed assets charged at the rate of 10% per annum.
8. Interest on working capital	Interest is charged at the rate of 12.5% per annum on the working capital for half the period of crop.
9. Kind payments	The kind payments are evaluated at prices prevalent in the village at the time such payments are made.
10. Main product and by-product	Imputed on the basis of post harvest prices prevailing in the selected villages.

Allocation of Joint Costs

8. The expenditure incurred on, or imputed for some of the cost items related to the farm as a whole. Such joint costs are allocated to individual enterprises, among different categories of livestock and so on. Depreciation on farm buildings and implements, land rents, land revenue, cesses and taxes, interests on owned fixed capital are such costs which are allocated to individual crop enterprises in proportion to their areas. The cost on livestock is allocated to each category of animals in proportion of its numbers to the total number of animal owned by the farmer.

Apportionment of joint Costs

9. The apportionment of total costs incurred jointly for different crops grown in crop mixtures is done in proportion to the total value of output contributed by individual crops in the crop mixtures. The apportionment of total cost of cultivation between the main produce and the by-products is done in proportion to their contribution to the total value of output.

Evaluation of Farm Assets

10. The following procedure is adopted for the evaluation of farm assets.

Item	Procedure
(1)	(2)
Owned and self cultivated land	Evaluated at rates prevalent in the village taking into account the differences in type of soils, distance from village, source of irrigation, etc.
Farm buildings (cattle sheds, storage sheds, etc.)	Evaluated at rates prevailing in the village.
Implements and other farm machinery	Evaluated at market prices.
Livestock	Evaluated at market prices.

Annexure II.*ESTIMATION PROCEDURE FOR INTEGRATING ESTIMATES OF MINOR CROPS BASED ON CROP COMPLEX AND SINGLE CROP APPROACH**

1. The sampling design of the scheme for estimating cost of cultivation of principal crops will continue to be the same as is being followed at present. However, for crops grown in limited areas, which do not find adequate representation in the sample selected following crop complex approach, the sample may be augmented by selecting additional villages/clusters following single crop approach for such special crop(s). Integrating the estimates obtained from crop complex and single crop approach would provide improved estimates for such special crops.

2. Sampling Design and Estimation of Costs and Their Standard Errors

2.1 The sampling design for selecting additional sample will be the same as in the crop complex approach with the only difference that the selection probabilities of tehsils as well as village/clusters will be based on area under the specific special crop instead of area under crop complex. The esti-

mation procedure under the crop complex approach will also be applicable to additional sample with the new set of probabilities of selection.

2.2 Since the main object is to estimate the cost per hectare and the cost per quintal for a crop, estimates will be obtained separately for each of the different items of cost to provide an estimate of total cost which, divided of cost corresponding estimates of area and production, would yield the required estimates. As the sampling design is a stratified one, the costs are estimated separately for each stratum, i.e., zone and from these estimates the village. corresponding estimates for a state will be calculated. The cost estimates of a crop for a group of states will be combined in a similar manner to give a combined estimate for the group of states. The procedure for building up strata estimates under crop complex approach is given below:

- (i) Let T be the number of tehsils in a zone out of which t tehsils are selected with probabilities P_i ($i=1, \dots, T$) proportional to the total area under selected crops in

a tehsil and with replacement. Here $P_i = A_i/A$ where A_i is area under crop complex in i th tehsil and A is similar area in the zone.

- (ii) Let N_i ($i=1, 2, \dots, t$) be the number of villages in i th selected tehsil out of which n_i ($=1$) village is selected with probability P_{ij} ($j=1, 2, \dots, N_i$) proportional to the total area under selected crop complex in a village. Here $P_{ij} = A_{ij}/A_i$ where A_{ij} is the area under crop complex in j th village of i th selected tehsil.

- (iii) In each selected village/cluster let all the holdings be classified into L ($=5$) size class and let M_{ijk} be the number of holdings growing the particular crop in the k th size class of j th village/cluster of i th tehsil. Let $M_{ij} = \sum_{k=1}^L M_{ijk}$ be the total number of holdings in the j th village/cluster of i th tehsil. Let m_{ijk} be the number of holdings selected out of M_{ijk} by simple random sampling without replacement.

- (iv) Let Y_{ijkl} be the cost incurred by the land holding in the k th size-class of the j th village/cluster of i th tehsil. Then,

$$\bar{Y}_{ijk} = \frac{1}{m_{ijk}} \sum_{l=1}^{m_{ijk}} Y_{ijkl}$$

is an unbiased estimate of cost per holding in the k th size-class. Hence,

$$\hat{Y}_{ij} = \sum_{k=1}^L M_{ijk} * \bar{Y}_{ijk}$$

will be an unbiased estimate of total cost incurred by all holdings growing the crop in that village/cluster.

- (v) Let X_{ijkl} represent similarly the area under the crop in the i th holding of the k th size-class of the j th village/cluster of i th tehsil.

Then,

$$\bar{X}_{ijk} = \frac{1}{m_{ijk}} \sum_{l=1}^{m_{ijk}} X_{ijkl}$$

Will represent the average area under the crop per holding in the k th size-class and

$$\hat{X}_{ij} = \sum_{k=1}^L M_{ijk} * \bar{X}_{ijk}$$

will be an unbiased estimate of total area under the crop in the village/cluster.

Define

$$\hat{Z}_{ij} = \frac{\hat{Y}_{ij}}{N_i P_{ij}}$$

and

$$\hat{V}_{ij} = \frac{\hat{X}_{ij}}{N_i P_{ij}}$$

and calculate

$$\bar{Z}_i = \frac{1}{n_i} \sum_{j=1}^{n_i} \hat{Z}_{ij}$$

$$\bar{V}_i = \frac{1}{n_i} \sum_{j=1}^{n_i} \hat{V}_{ij}$$

However, since $n_i = 1$ in the present case

$$\bar{Z}_i = \hat{Z}_{i1} \quad \text{and} \quad \bar{V}_i = \hat{V}_{i1}$$

Further let

$$Z_i = \frac{\bar{Z}_i}{T P_i}$$

and

$$V_i = \frac{\bar{V}_i}{T P_i}$$

$$\text{and } \bar{Z}_h = \frac{1}{t} \sum_{i=1}^t Z_i$$

$$\text{and } \bar{V}_h = \frac{1}{t} \sum_{i=1}^t V_i$$

Then

$$\hat{R}_h = \bar{Z}_h / \bar{V}_h$$

gives the estimates of cost per hectare for the h th zone. Its variance is approximately estimated as,

$$\text{Est. } V(\hat{R}_h) = \frac{1}{t(t-1)\bar{V}_h^2} \sum_{i=1}^t (Z_i - \hat{R}_h V_i)^2$$

and the calculation will be simplified to some extent.

3. It should be noted that all holdings in a particular size-class may not grow the crop for which the cost per hectare is to be estimated. In that case M_{ijk} will represent the number of holdings growing the crop in that particular size-class and m_{ijk} the number of sample holding growing the crop. If in an exceptional case m_{ijk} is zero but M_{ijk} is not, then M_{ijk} may be added to the adjoining class as an approximation.

4. The estimate of cost per quintal for the zone may be obtained similarly by taking X_{ijkl} to represent the production of the crop in the holding instead of area.

5. For special crops the estimates of cost based on additional sample will be obtained with selection probabilities P_i and P_{ij} corresponding to P_i and P_{ij} where P_i and P_{ij} are based on area under specific special crop. Let $\hat{R}_h(1)$ and $\hat{R}_h(2)$ be the estimates of cost per hectare in h th zone based on addition sample and that obtained from crop complex approach, respectively. Then a pooled estimator of cost is

$$\hat{R}_h = W \hat{R}_h(1) + (1 - W) \hat{R}_h(2)$$

Where W may be approximately taken as

$$W = \frac{n_1}{n_1 + n_2}$$

Where n_1 and n_2 are the number of ultimate stage units (holdings) having the special crop in the two samples, respectively. The estimate of variance of the combined estimate for the special crop will be calculated as follows:

$$\text{Est } V(\hat{R}_h) = W^2 \text{ Est } V(\hat{R}_h(1)) + (1 - W)^2 \text{ Est } V(\hat{R}_h(2))$$

Estimates of Cost for States or Groups of States

6. The estimates of cost per hectare and cost per quintal for individual states or groups of states will be calculated as weighted averages of the zonal estimates. The weight will be Proportional to:-

- (i) the area under the crop in respective zones for calculating the combined estimate of cost per hectare, and
- (ii) the production in the respective zones for calculating the combined estimate of cost per quintal.

Thus, if the combined estimate over H zones is to be calculated then

$$\hat{R} = \sum_{h=1}^H W_h \cdot \hat{R}_h$$

Where \hat{R}_h are the zonal estimates and W_h are the zonal weights given by

$$W_h = \frac{A_h}{\sum_{h=1}^H A_h}$$

Where A_h is the crop area in the h th zone, for cost per hectare and

$$W_h = \frac{Q_h}{\sum_{h=1}^H Q_h}$$

Where Q_h is the production of the crop in the h th zone, for cost per quintal. The estimate of variance of R is given by

$$\text{Est } V(\hat{R}) = \sum_{h=1}^H W_h^2 \cdot V(\hat{R}_h)$$

EXTRACT FROM THE REPORT OF THE EXPERT COMMITTEE UNDER THE CHAIRMANSHIP OF PROF. Y.K. ALAGH TO EXAMINE METHODOLOGICAL ISSUES IN FIXING MSP

CHAPTER 1 INTRODUCTION

1.1 BACKGROUND

The Commission on Agricultural Costs and Prices in collaboration with the Directorate of Economics and Statistics, Ministry of Agriculture, Government of India organized a National Seminar on "Methodological Issues in the Fixation of Minimum Support Prices (MSP)" on November 6-7, 2002 to deliberate on the various facets of price policy pertaining to agricultural commodities. The recommendations of the Seminar are given at Annexure-I.

In this Seminar, one of the recommendations made was the constitution of an expert Committee to look into various methodological issues relating to fixation of MSP. Accordingly, the Ministry of Agriculture appointed an Expert Committee under the Chairmanship of Prof. Y.K. Alagh on 7th May, 2003. The full constitution of the Committee and its Terms of Reference (TOR) are given at Annexure-II.

1.2 TERMS OF REFERENCE OF THE EXPERT COMMITTEE

The Terms of Reference (TOR) of the Expert Committee are as under:

- a) To examine the existing mandate of the Commission for Agricultural Costs and Prices and suggest whether - by way of a measure of response to the rapidly changing external environment arising in the wake of liberalization, privatization and globalization, there is need to reposition the Commission in terms of its mandate and remit.
- b) To examine the existing cost concepts for the purpose of fixing minimum support prices and suggest various factors including cost of transportation, marketing, processing, storage, etc., to

determine MSP. Besides, the Committee may also analyse the appropriateness of existing methods followed in imputing the value of (i) family labour; (ii) rental value of land; (iii) interest on capital; (iv) depreciation on fixed items such as tractors, bullocks, etc., and recommend measures for improvement so as to make them more realistic.

- c) To examine the existing structure of tariff, taxes, credit, market etc. and to suggest various measures to make it most competitive and remunerative to the farmers in the wake of trade liberalization and globalization and also to encourage diversified agricultural growth.

- d) To examine other related and relevant matters that are important for improving the system.

The Expert Committee held six formal meetings under the Chairmanship of Prof. Y.K. Alagh on 25th July, 2003, 27th September, 2003, 4th January, 2005, 15th March, 2005, 23rd May, 2005 and 31st May, 2005.

1.3 GENESIS OF CACP

Recognizing the need to evolve a balanced and integrated price structure in the perspective of the overall needs of the economy, with due regard to interests of both producers and consumers, the Government of India had set up a Committee under the Chairmanship of Shri L.K. Jha, the then Secretary to the Prime Minister on 1st August, 1964 to advise the Ministry of Food and Agriculture (now the Ministry of Agriculture) on the determination of the prices of rice and wheat. The domain of coverage of crops was expanded to coarse cereals also. The Committee was asked to advise on such prices, which were fair and economical. Later, to institutionalize the system of determination of fair and economical prices of various agricultural commodities on continuous

basis, the Government decided to set up a permanent body, called Agriculture Price Commission 1965. It was renamed as the Commission for Agricultural Costs and as in 1985 and its Terms of Reference were also revised.

EXISTING MANDATE (TERMS OF REFERENCE) OF CACP

The existing Terms of Reference (TOR) of the CACP are as follows:

- i. To advise on the price policy of paddy, rice, wheatjowar, bajra, maize, ragi, barley, gram, tur, moong, urad, sugarcane, groundnut, soyabean, sunflowerseed, rapeseed and mustard, cotton, jute, tobacco¹ and such other commodities as the Government may indicate from time to time with a view to evolving a balanced and integrated price structure in the, perspective of the overall needs of the economy and with due regard to the interests of the producer and the consumer.
- ii. While recommending the price policy and the relative price structure, the Commission may keep in view the following :
 - b) The need to provide incentive to the producer for adopting improved technology and for developing a production pattern broadly In the light of national requirements;
 - c) The need to ensure rational utilization of land, water and other production resources;
 - d) The likely effect of the price policy on the rest of the economy, particularly on the cost of living, level of wages, industrial cost structure, etc.
 - e) The Commission may also suggest such non-price measures as would facilitate the achievement of the objectives set out above.
 - f) To recommend from time to time, in respect of different agricultural commodities, measures necessary to make the price policy effective.
 - g) To take into account the changes in terms of trade between agricultural and non-agricultural sectors,
 - h) To examine, where necessary, the prevailing methods and cost of marketing of agricultural commodities in different regions, suggest measures to reduce costs of marketing and recommend fair price margins for different stages of marketing.
 - i) To keep under review the developing price situation and to make appropriate recommendations, as and when necessary, within the framework of the overall price policy.
 - j) To undertake studies in respect of different crops as may be prescribed by, Government from time to time.
 - k) To keep under review studies relating to the price policy and arrangements for collection of information regarding agricultural prices and other related data and suggest improvements in the same, and to organize research studies in the field of price policy.
 - l) To advise on any problems relating to agricultural prices and production that may be referred to it by Government from time to time.

At present, the Government announces for each season MSP for 25 agricultural commodities. In case, the price of a particular commodity tends to go below MSP, the Government organizes purchase operations through public and cooperative agencies such as Food Corporation of India, Jute Corporation of India, Cotton Corporation of India, National Agricultural Coop-

1. In addition copra was included in the domain of MSP with effect from 1989-90, nigerseed and sesamum from 1994-95 and lentil from 2001-02.

erative Marketing Federation (NAFED) and Tobacco Board besides other agencies designated by the State Governments.

1.6 STRUCTURE OF THE REPORT

This report has been presented in seven chapters. The existing methodology for fixation of MSPs is reviewed in the second chapter. This includes the objectives of price policy, crops covered under MSP policy, some salient features of current MSPs, factors considered by CACP in recommending the level of MSPs, the difference between MSPs recommended by CACP and those fixed by the Government, and the procedure followed in fixation of MSPs. The third chapter presents the changes in environment and the need for a change in the mandate of CACP. The existing methodology of estimation of cost of production of farm products is reviewed in the fourth chapter. This chapter also brings out major issues related to the inclusion and estimation of certain items in the cost of production. Keeping in view the TOR of the committee, existing structure of tariff, taxes, credit delivery mechanism and markets for agriculture commodities are discussed in the fifth chapter. The sixth chapter is devoted to the emerging issues in fixation of MSPs and estimation of cost of production. The final recommendations of the Committee are given in the seventh chapter.

CHAPTER 2 EXISTING METHODOLOGY FOR FIXATION OF MSPs

2.1 EXISTING OBJECTIVES OF PRICE POLICY

The main objectives of the Government's price Support policy for agricultural commodities is to ensure remunerative prices to the growers for their produce with a view to encouraging higher investment and production and also to safeguard

the interest of consumers by making available supplies at reasonable prices. While formulating the price policy, the following are kept in view:

- i. The need to provide incentive to the producer for adopting technology and for maximizing production;
- ii. The need to ensure rational utilization of land and other production resources; and
- iii. The likely effect of the price on the rest of the economy particularly on the cost of living, level of wages, industrial cost structure, etc.

Price policy seeks to provide a fair return to efficient farmers while keeping in view the interest of the consumers in the sense that it tries to keep the prices of food and other agriculture commodities at reasonable levels. In the process, it endeavours to strike a balance between producers' and consumers' interests.

2.2 CROPS COVERED UNDER MSP POLICY

At present, 25 crops are covered under the price support policy. These include seven cereal crops (paddy, wheat, jowar, bajra, maize, ragi and barley); five pulse crops (gram, arhar-tur, moong, urad and masur[lentil]); eight oilseeds (groundnut, sunflower seed, soyabean, rapeseed-mustard, toria, safflower, nigerseed and sesamum); copra (dried coconut); sugarcane, cotton (kapas), raw jute and tobacco. The number of support prices declared are, however, larger than 25, because more than one support price is declared according to the variety and grade in the case of paddy, soyabean, copra, cotton, raw jute and tobacco. In the case of sugarcane, the statutory minimum price varies according to the recovery percentage.

2.3 SALIENT FEATURES OF CURRENT MSPs

Some salient features of MSPs are:

- (i) Minimum support prices are kept at the same level throughout the country, which, through incentives/disincentives, helps in encouraging the production in line with comparative advantage of various regions, but excludes the consideration of transport costs. This acts as a disincentive for deficit regions where production picks up.
- (ii) Support prices remain the same during the entire marketing year. The marketing year for the purpose of MSP policy varies from crop to crop. For example, for rabi crops, it is April to June.
- (iii) Support prices for different varieties and grade of commodity vary in a structured manner according to the past perceived pattern, not necessarily on account of demand reflected through the differences in market prices (Examples-paddy, soya-bean, raw cotton, raw jute, copra)
- (iv) The Inter-year changes in support prices have always been non-negative.
- (v) The inter-year changes in support prices have fluctuated widely depending on the emphasis given to various factors by the government at different points of time.
- x. Demand and Supply situation
- xi. Effect on Industrial Cost- structure
- xii. Effect on Cost of Living

2.4.2 Cost of Production

It is recognized that support prices would not be considered as incentive prices by farmers unless these are fixed at levels, which would, in the long run, provide a sufficient margin of profit to the efficient and a majority of farmers. Therefore, behaviour of unit cost of production is an important consideration in the determination of support prices. However, no attempt is made to arrive at the level of support prices, by using a cost-plus formula on year-to-year basis. Yet a careful analysis of trend in average cost of production in various states is done by the Commission. Several limitations of using a cost-plus approach in fixing MSPs are recognized by the CACP. Some of these are as follows:

2.4 FACTORS CONSIDERED BY CACP IN RECOMMENDING MSPs

2.4.1 General Factors

In formulating the recommendations in respect of level of MSPs and other non-price measures, the Commission at present takes into account, *inter alia*, the following important factors:

- i. Cost of Production
- ii. Inter-Crop Price Parity
- iii. Effect on General Price Level
- iv. International Price Situation
- v. Effect on Issue Prices and Implications for Subsidy
- vi. Terms of Trade
- vii. Changes in Input Prices
- viii. Input-Output Price Parity
- ix. Trends in Market Prices
- (i) Whose cost of production to be considered
 - The cost of production varies from farm to farm and even from plot to plot Even the state level average cost varies widely from state to state.
- (ii) Which cost of production to be considered
 - There are several theoretical notions of cost. Should imputed values of own resources be included? If yes, how to impute these. Should value of management input be included? If yes, how to impute. What should be done in the case of crop failure - partial or whole. Whether something for risks be imputed and added to the cost?
- (iii) Quite often, inter-crop variation in cost of production do not reflect the relative demand-supply and market price ratios (for example wheat vs barley).
- (iv) As cost of production fluctuates from year to year, cost-plus approach will lead to fluctuation in MSPs.

- (v) A fixed cost-plus method does not allow the price fixing authority flexibility in encouraging crops which may be necessary from national requirements.

in relative prices of rice and wheat and some evidence of decline in growth rate in real wages of agricultural labourers.

2.4.3 Inter-Crop Price Parity

Since area often tends to shift, though at the margin, from one crop to another depending upon relative prices and profitability, it is necessary to maintain inter-se parities between different crops at a reasonable level. The Commission started giving a Report for the entire agricultural Season, Kharif or Rabi, only from the early Eighties, when the Chairman of this Committee was the Chairman of the Agricultural Prices Commission as it was known then. Inter crop parities, as far as MSP is concerned, should reflect long run considerations such as technological changes and evolution of demand pattern rather than short-run factors. For this reason, it is important to avoid sudden increases in MSP of any particular crop. To this extent, it is important to avoid any mechanical relationship between crop specific cost of production and the MSPs set.

2.4.4 Effect on General Price Level

This relates mainly to foodgrains which are the most important items consumed by the poor. During 1975-1990, wheat and rice prices tended to rise less than the overall rate of inflation. This happened without any corresponding decline in the profitability because of sustained yield increases. Thus both producers and the poor consumers benefited. Significantly, this period is the period when poverty declined in India whereas in earlier and later periods there is less evidence of sustained poverty decline. This observation highlights the crucial importance of yield raising investments in technology and Infrastructure, and also points to possible conflicts between producer interests and those of the poor in periods of low yield growth. In the 1990s, there was deceleration in yield growth, increase

2.4.5 International Price Situation

While India was a closed economy, it was not necessary, while recommending MSPs, to consider world price movements explicitly. As a result, the MSPs recommended/fixed did not always bear relationship, either in absolute or relative terms, to prevailing world prices. However, with liberalization, and the pressure in WTO to open agricultural trade eventually, it is necessary that:

- * There be a close co-ordination and integration between domestic price policy and trade policy pertaining to agricultural goods.
- * MSPs recommended/ fixed should be consistent with the border prices plus tariff and other policies of the Government including tax and monetary policies. Underlying the recommendations of CACP has been the view that relationship between domestic and world prices should be seen in a medium-term context.
- * This is partly because there might be reasons to diverge from world prices. either to provide encouragement to new technology or to ensure affordable prices for the poor and partly because domestic prices need to be insulated from the large short-run variation in world prices.

2.4.6 Effect on Issue Prices and Implications for Food Subsidy

Any increase in the effective support price of items supplied through the PDS involves a rise in the subsidy burden of the government unless the issue price is increased correspondingly. This means that CACP not only has to balance the

interests of producers and consumers but also consider the fiscal implications of its recommendations while recommending MSP.

2.5 DIFFERENCES IN MSPs RECOMMENDED BY CACP AND THOSE FIXED BY THE GOVERNMENT

As there is no fixed formula-approach in fixation of MSPs, there is an element of subjectivity in terms of treatment of various factors entering into the decisions / judgment of CACP and that of the government. Naturally, therefore, there is likely to be some difference in the MSPs recommended by CACP and that fixed by the government. But the question is how much is the deviation and whether the deviations are more frequent in certain commodities. Acharya and Jogi (2003) have examined this. The analysis pertains to the period 1965-66 to 2001-02 and includes 711 pairs of prices recommended by CACP (PR) and those fixed by the Government (PF). The data include 282 pairs for cereals, 99 for pulses, 150 for oilseeds, 81 for fiber crops and 99 for others. The analysis revealed that (a) in two thirds of the cases, PF was the same as PR; (b) there were even cases (5.8%) when government fixed lower support prices than that recommended by CACP; (c) if 5 percent deviation in PF and PR is ignored, in 85.4 percent cases, the government had accepted the recommendation of CACP; (d) the frequency of government fixing substantially higher MSPs than recommended by CACP was considerably higher in cereals and copra than other crops; and (e) the deviation of PF from PR was considerably higher in a row for wheat during 1997-98 to 2001-02.

Considering the increasing tendency of political-economic compulsions outweighing the rational choices in the matter of MSPs, there is a case in assigning statutory status to CACP and also to MSP. The High Power Committee on Long Term Grain Policy (Sen, 2002) had also recommended for assigning a statutory status to CACP

and to the MSPs recommended by it. The committee, however, recommends that a statutory status be assigned to CACP.

2.6 PROCEDURE FOLLOWED IN FIXATION OF MSPs

The MSPs are fixed by the Union government on the basis of recommendations of CACP. The CACP follows following steps in formulating its recommendations to the Government.

- (i) The CACP submits its recommendations to the government in the form of Price Policy Reports every year, separately for following groups of commodities:
 - (a) Kharif crops
 - (b) Rabi crops
 - (c) Sugarcane
 - (d) Raw Jute.
 - (e) Copra
- (ii) The process of monitoring of all the parameters/factors mentioned in section 2.4 continuously goes on in the Commission.
- (iii) Based on the emerging situation, a comprehensive questionnaire is prepared, deliberated and subsequently sent to all the state governments and concerned National organizations and Ministries.
- (iv) After the receipt of replies to the questionnaires, the Commission carefully analyses these and identifies issues for discussion/elaboration. Subsequently, a series of separate meetings is fixed with state governments, National organization like FCI, NAFED, CCI, XI, traders' organizations, processing organizations, key central Ministries and farmers groups.
- (v) The Commission also makes visits to states for on-the-spot assessment of the emerging scenario.
- (vi) Based on all these, the Commission holds its internal discussions and finalises its recommendations/report, which is submitted to the government.

- (vii) The government, in turn, circulates the CACP reports to state governments and concerned central Ministries for their comments. Based on the feed back so received, the Cabinet Committee on Economic Affairs (CCEA) of the Union government takes a final decision on the level of MSPs and other complementary recommendations of CACP.
- (viii) The CCEA also considers all the factors listed in section 2.4, which are taken into account by CACP.

2.7 RELATED POINTS/ISSUES RAISED IN RECENT OFFICIAL DOCUMENTS

A few related points/ issues, as reflected in the observations made In official documents (Economic Survey, Mid-Year Review and Report on Central Government Subsidies) of the Ministry of Finance, have a bearing on the TOR of this Committee. These observations are:-

- * With the transition from a net importer to a net exporter of agricultural products as well as the availability of futures prices in the commodity exchanges, cost-based MSPs require rethinking.
- * There has to be restraint in hiking the MSP of foodgrains till it equals the C_2 cost of production of the least cost States. There has to be rationalization of the existing high level of State levies In foodgrains. The proposal to announce a procurement price inclusive of 4 per cent State levies in lieu of the MSP needs to be pursued.
- * It is of paramount importance to set More realistic MSPs, particularly with respect to wheat. To conform to its true nature, the MSP should correspond to the CACP-determined C_2 cost. Since these estimates may vary across regions, a simple average of these costs should be used as the uniform MSP.

The above comments are neither based on the actual functioning of agricultural price policy in India nor all of them are internally consistent. This Committee has taken, in addition to other factors, market based approach into account.

CHAPTER 3 CHANGING ECONOMIC AND TRADE ENVIRONMENT AND NEED FOR REPOSITIONING OF CACP

[3.1 - 3.3 not included here]

3.4 TRANSITION AND DIVERSIFICATION IN INDIAN AGRICULTURE

Agriculture is an industry under an open sky which has a wide range of its own complexities. It has experienced many changes over the past five and a half decades. India was a net importer of foodgrains during the first three decades after Independence. However due to Support Price Policy and technological revolution in the country, it not only became self-sufficient in foodgrains but also net exporter in recent years. In the wake of WTO, Indian agriculture is facing several new challenges and the world of the farmers has changed - A new paradigm is, therefore, needed.

The all-India rate of growth of real Farm Business Income (FBI) per hectare decelerated sharply from 3.21% per annum during the decade of 1980s to only 1.02% per annum during the decade of 1990s.² With the signing of Agreement on Agriculture (AoA), competitiveness in trade of agricultural commodities has increased. in this backdrop, issues like tariffs, credit policies, macro trends and market structures pplay crucial role.

2. San, Abhijit and Bhatia, M.S. (2004).

Diversification has been driven by domestic demand emerging from the faster growth of the economy. In the 1990s, the demand for vegetables, fruits, milk, tea and coffee has been rising at a rate of 5-6 per cent as compared to a corresponding annual growth of 3 per cent during the earlier periods.

The growth in the demand for forest products was also high. This was the only agricultural sector in which output did not grow. The diversification of Indian agricultural demand, however more generally, directed the growth of the agricultural economy.

This diversification of domestic demand led to a very substantial change in the output growth package. Broadly, the pattern has been that the growth in demand for foodgrains has been around 2.5 per cent per annum, while the demand for commercial crops has grown at around 5 per cent per annum and that of plantation crops like tea and coffee and non-land-based agricultural products like fish has grown at around 7 per cent per annum. Forestry was the exception, demand growth being met by imports.

The major impact of faster income growth was on domestic demand leading to a process of demand diversification in a big way. For example, the 1980s and 1990s recorded a much faster growth of agro-based consumption in the Indian demand basket. Per capita consumption of sugar goes up from 6.2 in 1975-76 to 14.9 kgs./ year and that level is not only much higher than in comparable countries, but also than in countries which have much higher levels of per capita income. Also, there has been a very rapid increase in consumption of non-crop based commodities like eggs and milk. Egg consumption per capita goes up from 15 to 30 per year in the period of 1975-98. As per capita disposable income increases, it is expected that consumption pattern move away from cereals to commodities like milk

and eggs. Therefore, it is imperative to formulate policies that encourage diversification, in tune with changing pattern of demand.

Diversification of the kind discussed above had an impact on work force structure also. The work force engaged in agriculture sector has been progressively decreasing. Work force depending on crop husbandry was 73.5% in 1961. According to National Sample Survey's 55th Round, it has gone down to 54.3% in 1997. Agro-based items of consumption in demand baskets of different income groups have undergone changes. With increase in per capita national income, people consume more nutritive foods like eggs, milk, cheese, vegetables and fruits. This substitution effect has been more prominent in the decade of nineties as is revealed from the empirical data.

In matter of work force, the following three important features are noteworthy:

- * The decline in workforce engaged in crop husbandry is higher than agriculture sector as a whole.
- * The increase in employment based on livestock is high.
- * Forestry is not absorbing a large share of the workforce. These trends are evident from Table 3.4.

Table 3.4. Structural Change in Workforce in India

Sector	Percentage of workforce	
	1961	1999-2000
(1)	(2)	(3)
1. Agriculture and allied sector	75.9	59.9
1.1 Agriculture	73.5	54.3
1.2 Livestock	2	4.1
1.3 Agricultural Services	0	0.9
1.4 Logging Forestry and Fishing	0.5	0.5

The phenomenon of shift of labour force from crop husbandry to other occupations is more significant in some States than the others. The States which have experienced higher percentage of shift in the occupation are given in Table 3.5.

Table 3.5. Percentage Share of Agriculture Workers

State	Percentage Share of Agriculture workers	
	1991	2001
(1)	(2)	(3)
1. Gujarat	56.3	51.0
2. Haryana	57.8	51.6
3. Karnataka	63.1	55.9
4. Punjab	55.3	39.4
5. Tamil Nadu	59.5	49.5
India	64.8	58.4

India has surplus stocks of rice and wheat whereas there is a deficit in production of pulses and oilseeds. It is, therefore, logical to diversify crop acreage from traditional paddy and wheat to oilseeds and pulses. This brings the role of non-price factors such as availability of appropriate high yielding variety of seeds, cost effective technologies and effective marketing support to forefront. For example, if a need is felt to diversify some area from wheat to oilseeds like rapeseed and mustard to bridge the gap between domestic demand and availability of edible oils, it is necessary to provide higher relative price for rapeseed and mustard, apart from improving its yields and imposing a higher import duty on edible oils. Similarly, diversification towards horticultural crops would require not only price and marketing support but also appropriate technology and infrastructure such as cold-chain and storage.

There is the need to improve productivity in grain cultivation through technological and other support measures and to release cropped area for non-grain crops. This will mean technological change, for example the Hybrid Paddy and

shifting out of rice / wheat cultivation in marginal areas. Given the high net returns from these two crops, the diversification out of rice and wheat combination has to be a carefully balanced process that does not result in any major fall in farmers incomes during the transition period.

Diversification policies are now undergoing dramatic changes. In a phase of rapid growth, opening up of economies to trade impulses diversification. For example the diversification of the agricultural demand basket became a significant feature of the ESCAP economies from the mid-eighties onwards. FAO projected that upto 2010, annual GDP growth would be 7% in East Asia and 4.4% in the Near East and North Africa, with the West Asian (Near East) component growing faster (Alexandratos, 1995). Per capita income growth was 5.7% annual for East Asia. With this kind of income growth there was a shift of demand to non-cereal food items and commercial crops. Oilseed demand, for example was to grow at 4.2% annual in East Asia and 4.1% annual in the Near East and North Africa. Countries projected to have high volumes and growth of agricultural imports were Japan, Hong Kong, the Republic of Korea, Saudi Arabia, Singapore, Malaysia, Indonesia, the Islamic Republic of Iran, Thailand, Kuwait and Oman. These countries were estimated to be large and growing markets for fruit and vegetables, meat and countries like Japan and Korea, of fish. In fact upto the mid nineties the agricultural import of each of these countries, was growing between 4 to 8% per annum. Unfortunately in the Nineties the markets in these countries for agricultural imports collapsed on account of the East Asian melt down and are only recovering now.

3.5 CHANGES IN INTERNATIONAL TRADE REGIME

3.5.1 Removal of QRs and Tariffication

The Agreement on Agriculture (AOA) sought to establish a fair and market oriented agricultural trading system. The initial enthusiasm about benefits of VVTO and AoA did not last long, as its adverse effects on Indian economy started appearing. The developed countries did not meet obligation expected of them but pressurized developing countries to open up their markets to imports. Some of the general changes that have taken place are recapitulated as under:

i. When India initiated economic reforms in 1991, domestic prices of some agricultural commodities were below international prices. The devaluation of the Indian Rupee in June 1991 further increased the gap between domestic and international prices. The arguments advanced in the mid-eighties that Indian agriculture in a static sense was net taxed because producers were not having access to sell their produce in international market which offered higher prices than the domestic market were repeated with greater insistence. While the analysis was conducted in a static framework and agricultural prices were known to follow cyclical trends, the official Indian line and that of some economists was that Indian agriculture is highly export competitive and that freeing trade would help the country to harness vast export potential. Liberalization of agricultural trade, following VVTO was further seen as a great opportunity for promoting farm exports. Though some scholars warned against export orientation of Indian agriculture, their views were not paid attention, as pro-liberalization thinking dominated policy decisions. Fears concerning imports, following trade liberalization and on account of the distorted nature of global agricultural trade were brushed aside.

ii. The situation changed dramatically after 1996 and the export pessimists turned out to be right. Domestic prices have turned higher than the international prices and India has become an attractive market for import of most of agricultural commodities. Cheap imports were taking place in India's markets in - sugar, raw cotton, wheat, broken rice, chicken and other commodities. This has put the country in a paradoxical situation. For, instance, while wheat procured by Government was not finding markets, wheat imports flowed into the domestic market in 1999 due to removal of QRs. This further depressed the domestic prices creating conditions for higher loss to government when it sells wheat in the open market. Cotton stocks built up and imports took place simultaneously. Sugar imports meant that the domestic cane cycle was superimposed with imports and fluctuations were higher in the nineties as compared to earlier decades, causing havoc to the sugar economy in India, particularly in the northern region.

iii. In pursuance of obligation under AoA, India has removed quantitative restrictions (QRs) from 620 consumer food products between 1997 and 1999 and has eliminated such restrictions on all agricultural products with effect from April 2001. Further, India has fixed bound tariff rates at 100 percent for primary, 150 percent for processed commodities and 300 percent for certain types of edible oils. With the elimination of all QRs on agricultural products, there exists a perception that removal of QRs would lead to a scenario where our domestic market might get swamped by cheaper agricultural imports. Given the fact that India's tariff ceilings bindings are at a very high level compared to the current level of applied rates, our agricultural imports can be managed through tariff mechanism even in the absence of any QRs.

iv. One major concern associated with the opening up of the Indian agriculture is that it will get exposed to large price fluctuations which

characterize the world commodity market. It was theorized that the AoA would induce greater price stability by increasing the depth of the world commodity market. This has however, not been found to have occurred so far. The world price volatility, if transmitted through open cross border trade, will increase the domestic price instability in India. This may alter the risk perception of Indian farmers and can have serious production implications.

v. The process of opening up of Indian agriculture and its integration with the world economy has begun. India has accorded greater access to foreign goods in its market. For instance, import of palm oil to India increased from 1.8 million MT in 1998 to 2.9 million MT in 1999 and 3.1 million MT in 2000.

Given the fact that composition of demand within edible oilseeds group is price elastic, availability of cheaper imported palm oil in the country has contributed to crashing of prices of coconuts by about 49 percent between 1999 and 2000. Thus, removal of QRs has had both positive and negative impact. It made edible oils available at highly competitive prices to consumers on one hand but decreased the price received by the oilseed growing farmers on the other hand.

3.5.2 Changes In Tariff Structure

Normal peak rate of tariff on agricultural commodities in 2000-01 was 40% which was reduced to 35% in 2001-02 and further to 30% in 2002-03. The tariff rate has been pegged at 30% since then. However, there have been significant changes in the duty structure of certain select agricultural commodities, notable among them are as follows:

* The import duty on cotton and pulses has been increased from 5% to 10% during 2003-04. But for most of the decade of the Nineties, tariffs on cotton - were zero.

* The import duty on edible oil was only 15% in 1998. To control surges in imports, the duties have been revised many a times and the present level of duty are 65% for crude palm oil, 75% for refined palm oil, 75% for other types of crude oil and 85% for other types of refined oils. The duties on refined and crude soyabean oil are low at 45% which is due to lower tariff bindings. However, the duty on non-edible vegetable oil is 30%.

* The import duty on all the cereals including wheat, rice, maize and other coarse cereals was 0% prior to 1999 due to their low tariff bindings. After successful completion of negotiations under Article XXVIII of GATT, the bound rates have been revised and are in the range of 60% to 80%. At present the applied rate is equal to the bound rates.

* On a number of products, applied rates of duty have been increased during the last five years on account of the actual surge, in imports or the increased threat perception from imports. The duty was increased from 30% to 50% in case of apple, from 30% to 100% in case of arecanut and garlic and from 30% to 60% in case of sugar. These changes were necessitated as a result of surges in imports. Likewise, the duties on pepper, clove, cardamom, poppy seed, tea, coffee, coconut and copra were increased due to increased threat perception from Imports. The duty on pepper, clove, cardamom, poppy seed at present is 70% while it is 100% on tea, coffee, coconut and copra.

3.5.3 Changed Global Scenario

Globalization process has enabled India, like many other countries, to offer ample opportunities in agriculture sector-both as an exporter of certain commodities in which it is surplus and as an importer of certain other commodities like oilseeds in which it is deficient. As a surplus producing country of rice, for instance, India has

penetrated in rice markets of certain co-developing countries. On the other hand, it has imported such commodities as palm oil to the tune of about 3.1 million MT in 2000 from Indonesia and Malaysia etc. to meet the domestic demand. While India's exports of many products suffered as we saw earlier, in the late Nineties and early part of this decade exports of foodgrains grew. Given the distorted nature of World trade markets, India's exports of rice and wheat were compatible with the WTO regime. But trade did not lead to diversification. In fact imports hurt the process.

3.6 MARKET ACCESS

While there have been some improvements in the market access in terms of nominal tariffs, agricultural trade continues to be distorted due to substantial continuation of subsidies in the developed countries. Average tariffs of agricultural commodities is around 40 percent whereas for industrial products, the rate is less than 10 percent. Further, various types of non-tariff barriers especially in the form of sanitary and phyto-sanitary measures have adversely impacted the agricultural exports of the developing countries.

A positive fall out of the AoA is that intra-developing country trade has started increasing. A WTO secretariat paper has revealed that during the post 1995 period, the developing countries are becoming important export markets for agricultural exports from co-developing countries. It has also been observed that imports of agricultural products from developing countries by the developed countries has risen more rapidly than imports from other sources.

3.7 EXPLICIT SUBSIDIES IN INDIAN AGRICULTURE

A subsidy is supposed to exist if there is financial contribution by the Government or any public body and a benefit is conferred. Subsidies

can take the form of direct transfer of funds, the Government revenue foregone, provision of or purchase of goods/services or any form of income or price support.

It is a fact that different countries have been subsidizing their agriculture and the level of subsidies given has not declined even after the signing of AoA. The main reason for extending subsidies is that both the price elasticity of demand and price elasticity of supply is low in case of farm produce and the sector is subject to unpredictable external shocks. Therefore, there is a need to extend support to agriculture if the required rate of growth is to be achieved. This fact is reported to have been appreciated during discussions in the WTO and accordingly there exists a provision in the AoA for the purpose.

Aggregate Measure of Support (AMS) for Agriculture in India was estimated at less than 10 percent. In fact, India was estimated to have a negative AMS to agriculture. In view of this, it is exempted from undertaking any reduction commitments. The more recent estimates by World Bank suggest that this negative AMS is now being eliminated by the fast rising prices of farm products in India. At present the entire expenditure on food security through public distribution system and public stock holding is exempted for domestic support reduction commitment and India should ensure that this clause continues as it is. It is important to maintain the present minimum support price system, but it has to be noted that the trend under WTO system is against making price interventions through parastatal like FCI. So alternative methods and organizations for price support to farmers have to be devised. These have to be WTO compatible, like producers groups and farmers associations. Although subsidies given to agriculture inputs like fertilizers, power, irrigation have contributed significantly in agricultural development and also towards food security, these have to be discontinued for not being WTO compatible and in the interest of

fiscal consolidation. While It Is important to maintain the minimum support price system and India should keep the issue alive, it has to be noted that the present trend in the global discussions is making interventions through parastatals more difficult as noted above and the sooner alternative strategies are identified which work through WTO compatible arrangements like operating through Producers Groups or Farmer's Associations. It is important to bear in mind that a favourable price environment and assured market conditions are the key elements of incentives to increase the production of agricultural commodities.

The dominant orthodoxy that India taxes agriculture was estimated in a well the Table could Thereleased known set of studies done for the World Bank by Gary Pursell (1993, with help of Ashok Gulati). In 1996, in a published report, the new estimates which are presented in Table 3.6.

Table 3.6. Economy-wide Reforms Removing the Anti-Agricultural Bias

Source of the Bias	(Protection Rate in %)		
	1970-71 to 1984-85	1985-86 to 1990-91	1991-92 to 1994-95
(1)	(2)	(3)	(4)
Economy-wide policies	-0.26	-0.25	-0.3
Agriculture Policies	-0.04	+0.07	-0.07
Total	-0.30	-0.18	-0.09

Source: Rosenthal D., G. Pursell, A. Gupta and B. Blarel, "Have Economy Level Reforms Helped Indian Agriculture", World Bank, Washington, 1996, quoted by Alagh (2004)

According to World Bank estimates the AMS was falling and since agricultural prices in India were rising faster than those in the World, this trend could be accentuated further. As compared AMS to the Pursell-Gulati estimates of negative AMS of 28 per cent, the finding for the nineties by the Pursell-Blarel studies is that the AMS is lower. The estimates normally discussed in India are based on the Pursell-Gulati methodology

originally developed by the World Bank. The Bank has changed that as is evident in the Pursell-Blarel estimates. The World Bank Report referred to above states the following:

"Accelerating a trend in the mid-1980s, the 1991 economy-wide reforms virtually eliminated the anti-agricultural bias implicit In the trade and foreign exchange regimes." The World Bank Report makes this point somewhat emphatically, which is repeated, since some commentators deny this.

World Bank's³ position is clear as the following quote shows:

"India devotes considerable public resources (centre and State) to agriculture which totaled Rs. 685 billion (US \$ 22 billion) in 1994-95, equivalent to 28 per cent of agricultural GDP (8 per cent of GDP). When measured as a share of agricultural GDP, India spends at least twice as much on agriculture as some East Asian economies". Table 3.7 reads as follows:

Table 3.7. Agriculture Public Expenditure expressed as a Share of Agricultural GDP, percentage

	India	Indonesia	Malaysia	Thailand
(1)	(2)	(3)	(4)	(5)
Average 1990-93	29.1	6.9	1.1	12.9
Memo Item				
Ag. Annual GDP	3.0	3.2	3.5	3.8
Growth (1980-93)				

Source: World Bank, 1996, as quoted by Alagh (2004).

Ashok Gulati who for long maintained the stance that the AMS was negative and was quoted extensively on this has now modified his position . In astudy released in May 2005, it is now stated that:

3. YK. Alagh, State of the Fanner in India, A Millennium Study: Vol.1 An Overview, (2009, p.210)

"we report less dis-protection of Indian agriculture in the 1990s than in earlier studies." (See K. Mullen, D. Qrden and A. Gulati, IFFPRI, 2005)

Notwithstanding, agriculture subsidy extended by India has been a matter of debate in various important fora such as VVTO and World Bank on the ground that agriculture sector in India receives the largest subsidy amongst the Asian countries. Even method of calculation of subsidies in India is under scrutiny. The country should well prepare itself to dispel such notion.

Fertilizer is an important input that leads to, *ceteris paribus*, increase in production level. However, in India, a preponderant proportion of farmers are resource poor and are not in a position to pay full price of fertilizers. Therefore, the Government provides subsidy on fertilizers to enable them to apply this input to enhance production level. Table 3.8 shows fertilizer subsidies *vis-à-vis* other agriculture related subsidies during 1990 to 2001.

Table 3.8. Explicit Subsidies Relating to Agriculture in India

Year	Food Subsidy		Fertiliser Subsidy		Food Subsidy as % of GDP		Fertiliser Subsidy as % of GDP	
	Current prices	Constant prices	Current prices	Constant prices	Current prices	Constant prices	Current prices	Constant prices
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1990-91	33.23	43.89	59.53	0.48	0.65	0.86	1.17	
1995-96	40.79	62.35	51.27	0.48	0.38	0.58	0.48	
2000-01	77.46	138.00	88.63	0.64	0.41	0.73	0.47	
CGR-I	4.19		-2.94					
CGR-II	13.68		11.57					
CGR-III	8.83		4.06					

Sources: 1. Report of the High Level Committee on Long Term Grain Policy, Ministry of Consumer Affairs, Food & Public Distribution, New Delhi.

2. Economic Survey (various issues), Ministry of Finance, New Delhi.

Note: CGR-I: Compound Growth Rate during 1990-91 to 1995-96

CGR-II: Compound Growth Rate during 1995-96 to 2000-01

CGR-III: Compound Growth Rate during 1990-91 to 2000-01

It may be seen from Table 3.8 that the growth rate in food subsidy has accelerated from 4.19% during 1990-95 to 13.68% during 1995-2000. The growth in fertilizer subsidy has also accelerated from -2.94% to 11.57% during the corresponding period. The food subsidy accounted for 0.41 per cent and fertilizer subsidy accounted for 0.47 per cent of GDP.

3.8 CONCERNS IN FOOD SECURITY

Food 'security' is covered under the Aoks 'non-trade concerns'. According to definition

given at the World Food Summit at Rome in 1996, "Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preference for an active and healthy life.

This definition emphasizes following three critical dimensions of food security:

- * There must be a physical supply of the desired food in sufficient quantity.

- * There must also be an economic access, e.g., the right to livelihood. So the issue of purchasing power is closely linked to food security.
- * There must be stability in supply which in a globalize scenario will include access to global food market.

India is a 'Foodgrains Secure' country but not necessarily a 'Food Secure'. Diversification of agriculture is important because it creates the conditions for broad based income growth in rural areas, which is the only solid basis for food security for a mass of the rural work force. Therefore, there are immense opportunities for investment and policy reform in agriculture sector in India.

3.9 NEED FOR REPOSITIONING OF CACP

The decade of nineties, particularly post-1995 period has brought about changes in internal and external conditions for agriculture sector. The Agreement on Agriculture (AoA) concluded in the Uruguay Round brought for the first time trade in agriculture under multilateral discipline of WTO. Because of its sensitive nature, both from economic and socio-political perspectives, India (for that matter, various national Governments including developed ones) have put in place complex support and regulatory systems for the development of domestic agriculture as well as exports. Some of the Important changes that have either taken place or are likely to take place in future under the WTO regime include the following:

- i. Removal of QRs (Quantitative Restrictions) and Tariffication Process.
- ii. Reduction in Subsidies
- iii. Market Access

- iv. Food and Livelihood Security Policies negotiated in the WTO Regime.

At present, there is an urgent need not only for formulating balanced agricultural price policy but also putting in place a protection system for Indian farmers which could be WTO compatible.

In view of the above mentioned facts therefore, it may be necessary to examine whether there is need to reposition the Commission in terms of its mandate and remit but also to examine the existing cost concepts for the purpose of fixing minimum support prices.

To respond effectively to new order, there is a need to emphasize not only on costs and prices but also on other important issues such as tariffs, credit policies, public investment, macro trends and market structures to meet new challenges. The real policy options are to build markets, develop information 'system of the economic opportunities available, provide financial institutions which work and provide finances for communication, processing, standardization, quality upgradation and trade. The farmers need to have access to improved energy and water supplies for improving productivity and diversification. Land development technologies in addition to inputs and services should be easily accessible.⁴

As CACP is poised to play a crucial role in agriculture price policy, Its mandate need to be vibrant and dynamic in consonance with domestic and global changes that are taking place. This

4. The relation of these objectives and India's trade policy negotiations since Doha are worked out in Y.K. Alegh, Agricultural Price Policy in A Trade Dominated Economy, In Mahendra Dev Ed., Essays in the Honour of CH Hanumantha Rao, Forthcoming.

calls for modifying and expanding the Terms of Reference of CACP and making it as a strategic policy maker in agriculture.

3.10 REVISION IN TERMS OF REFERENCE FOR CACP

As noted in the preceding paragraphs, it is imperative that CACP plays a role on the lines of role played by Tariff Commission. CACP may invent this role and replicate it in the agriculture sector. The Committee recommends role of CACP may be redesigned keeping in mind the larger framework. To accomplish this, the **Terms of Reference (TOR) of CACP should be revised** as follows to include in its mandate the tariff structure and other trade related measures for agricultural commodities:

- i. To advise on price policy of cereals, pulses, oilseeds, fiber crops and such other commodities as the government may indicate from time to time with a view to evolving a balanced and integrated price structure for the agricultural sector in the perspective of overall needs of the economy and with due regard to the interests of the farmers and the consumers.
- ii. To advise from time to time on the tariff structure and other measures relating to imports and exports of agricultural commodities and their processed products.
- iii. While recommending the agricultural price policy and trade related measures, the commission may keep in view the following.
 - * The need to provide incentives to the farmers for adopting improved technology and for developing a production pattern broadly in the light of demand pattern including that for exports in a trade dominated WTO policy for agriculture.
 - * The need to ensure food security both at macro and household level through ensuring widespread agricultural growth

and income and employment generation so that hunger, malnutrition and poverty is reduced.

- * The need to ensure sustainable use of land, water and other natural resources.
 - * The likely effect of the price policy on the rest of the economy, particularly on the cost of living, level of wages, cost structure of agro-based products, and competitiveness of agriculture and agro-based commodities.
- iv. The Commission may evolve non-price measures related to credit policy, marketing policy, crop and income insurance and other sectors as would facilitate the achievements of the objectives set out in (i) above.
 - v. To recommend from time to time, in respect of different agricultural commodities, measures necessary to make the price and tariff policy effective.
 - vi. To take into account the changes in terms of trade between agricultural and non-agricultural sectors.
 - vii. To examine, where necessary, the structure of taxes, levies and transport costs of agricultural commodities and recommend measures as would facilitate the achievements of the objectives set out in (i) above.
 - viii. To keep under review the developing price situation. and to make appropriate recommendations, as and when necessary, within the framework of the overall price policy.
 - ix. To undertake studies in respect of different crops as may be prescribed by Government from time to time.
 - x. To keep under review studies relating, to the price policy and arrangements for collection of information regarding agricultural prices and other related data and suggest improvements in the same, and to organize research studies in the field of price policy.

- xi. To advise on any problems relating to agricultural prices and production that may be referred to It by Government from time to time.
- xii. To effectively integrate these measures with its pricing recommendations and to show to the extent possible, with numbers and monetary calculations the extent of such integration in meeting the cost requirements of a competitive agriculture.

groups of commodities has been undertaken in the subsequent sub-sections. These commodities/ groups of commodities are as follows:

- * Pulses
- * Edible Oils
- * Sugar
- * Cotton

While pulses and oilseeds have been selected for detailed analysis as India imports significant quantities of these two products due to gap between domestic production and consumption, sugarcane and cotton are included as these two crops have been flag bearers of the non-food grains economy.

CHAPTER 5 EXISTING STRUCTURE OF TRADE, TARIFF, CREDIT AND MARKETS FOR AGRICULTURAL COMMODITIES AND IMPLICATIONS FOR AGRICULTURAL PRICE POLICY

[5.1.1 not included here]

5.1.2 Imports/Exports of Selected commodities

The analysis on performance of international trade in respect of four selected commodities/

5.1.3 Trade in Pulses

The Table 5.2 shows production of pulses *vis-à-vis* import/ export and also percentage of its availability:

Table 5.2. Ratio of Import to Availability of Pulses in India

('000 Tonnes Percentage)						
Year	Production	Import	Export	Availability*	% of Import to Availability	% of Import to Production
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1990-91	14260.00	791.95	0.00	15051.95.	5.26	5.56
1991-92	12020.00	312.61	0.00	12332.61	2.53	2.60
1992-93	12820.00	382.62	34.31	13168.31	2.91	2.98
1993-94	13300.00	628.16	43.60	13884.56	4.52	4.72
1994-95	14040.00	554.27	50.51	14543.76	3.81	3.95
1995-96	12310.00	490.75	61.36	12739.39	3.85	3.99
1996-97	14240.00	654.91	55.22	14839.69	4.41	4.80
1997-98	12980.00	1008.16	168.05	13820.11	7.29	7.77
1998-99	14910.00	563.60	104.10	15369.50	3.67	3.78
1999-2k	13420.00	250.77	194.18	13476.59	1.86	1.87
2000-01	11080.00	349.84	244.08	11185.76	3.13	3.16
2001-02	13370.00	2217.82	161.64	15426.18	14.38	16.59
2002-03	11140.00	1992.29	148.08	12984.21	15.34	17.88
2003-04#	15240.00	1701.16	150.99	16790.17	10.13	11.16

Provisional

* Availability = Production + Import - Export

Applied tariff protection is nominal at 10% only for the commodities under open general license (OGL). The demand for pulses for the year 2004-05 is projected at 17.06 million tonnes as against the production estimated at 13.67 million tonnes (second advance estimate) during the corresponding period. Net production after discounting 12.5% for seed, feed and wastage, works

out to 11.89 million tonnes. Thus, leaving a gap of 5.17 million tonnes which is required to be bridged by imports.

The large imports during the period from 2001-02 to 2003-04 influenced the wholesale prices of pulses as is evident from the Table 5.3:

Table 5.3. Index Numbers of Wholesale Prices - Pulses

Year	April	May	June	July	August	September	October	November	December	January	February
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1999-00	154.4	162.2	165.4	164.3	164.6	171.1	177.6	173.3	165.7	165.6	163.6
2000-01	171.7	174.5	178.3	183.7	181.2	177.9	178.1	183.9	186.2	181.6	176.7
2001-02	182.4	185.6	193.1	192.6	196.5	194.0	196.6	195.9	191.7	184.5	179.4
2002-03	178.4	180.4	182.2	179.7	183.3	187.0	186.9	187.1	179.4	172.6	174.1
2003-04	177.1	177.5	177.0	178.5	176.5	175.4	179.0	178.3	175.1	178.0	177.8

* As regards import duty, the present level of import duty on pulses is only 10% against the bound rate of 100%. The import of pulses in India has been in the range of 1.70 million tonnes to 2.20 million tonnes during the last three years.

* Pulses are very important for India's rural economy, particularly because they withstand dry land conditions. They also constitute a major component of the diet of the poorest of the poor, it is important to protect the domestic production of pulses and supplies have to be assured. There is adequate cushion between the applied and bound rates. Import duty on pulses have to be fixed taking these factors into account.

The Committee is of the view that concerted efforts should be made to attain technological breakthrough in substantially increasing yield rates from their current levels. However, greater emphasis will have to be put on the development of High Yielding Varieties. (HYV) of seeds by the research institutions so as to attain a high degree of self-sufficiency in production of pulses.

5.1.4 Trade in Edible Oils

The production, imports and availability of edible oils is exhibited in the table.5.4

Table 5.4. Ratio of Import to Availability of Edible Oils in India

('000 Tonnes, Percentage)						
Year	Production	Import	Export	Availability*	% of Import to Availability	% of Import to Production
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1990-91	4877.00	484.58	0.00	5361.58	9.04	9.94
1991-92	5022.00	226.05	0.00	5248.05	4.31	4.50
1992-93	5247.00	102.77	0.00	5349.77	1.92	1.96
1993-94	5397.00	114.36	0.00	5511.36	2.07	2.12
1994-95	5531.00	346.75	0.00	5877.75	5.90	6.27
1995-96	5641.00	1061.99	0.00	6702.99	15.84	18.83
1996-97	6171.00	1415.79	0.00	7586.79	18.66	22.94
1997-98	5041.00	1265.75	0.00	6306.75	20.07	25.11
1998-99	5880.00	2621.85	0.00	8501.85	30.84	44.59
1999-20	4953.00	4195.64	0.00	9148.64	45.86	84.71
2000-01	4616.00	4177.17	0.00	8793.17	47.50	90.49
2001-02	5761.00	4321.83	0.00	10082.83	42.86	75.02
2002-03	4591.00	4365.03	0.00	8956.03	48.74	95.08

* Availability = Production + Import - Export

Import of edible oils to India has been progressively increasing, especially during post-1995 period as may be seen from Table 5.4. Its percentage to domestic production was as high as 95% during 2002-03. This shows the degree of import dependence of the-country in this particular commodity group.

* The production of oilseeds attained a level of 24.75 million tonnes in the year 1998-99 from 10.83 million tonnes in 1985-86. However, during this time the Government liberalized import of edible oil by placing them under OGL and drastically reducing the import duty. Consequently, there had been sudden spurt in the import of edible oils after 1998-99. The large-scale import of oils especially of CPO/ RBD Palmolein adversely affected the domestic prices of oilseeds. It resulted in fall in the domestic prices of almost all oilseeds below MSP continuously for the next five years. This led the Government to undertake large scale price support operations. Imports and price support simultaneously shows the nature of policy in the recent past. Besides, drastic fall in the domestic prices of edible oils led to drastic

reduction in area under oilseeds in the subsequent years and the production fell as low as 15.06 million tonnes in the year 2002-03.

* Spurt in imports of edible oils, especially low priced palm oil from countries like Malaysia and Indonesia in recent years had a direct impact on demand for domestic oils including coconut oil as price elasticity within edible oil group is quite high. The low price of imported oils has substituted coconut oil. Since substantial increase in domestic production in short run is not technically feasible, the gap between demand and supply needs to be bridged by imports.

* Dependence on imports of edible oils will have to be reduced in coming years in view of dwindling end stock of edible oil and rising landed costs. This is imperative not only from the point of view of conserving foreign exchange but also from the point of view of increased risk that accompany when we depend on shallow international markets for failure of crop in one or more countries would jeopardize the prospects of

availability in international market, else major parts of foreign exchange would be spent on importing edible oils. There is, thus, a need to increase production of oilseeds in the country through diversification and also through better farm practices, availability of credit, investment in infrastructure with emphasis on irrigation which in turn would increase the yield rate and thus production. Because of dwindling stocks in the international market, such imports cannot be sustained for a long period of time. Costs will have to be cut and yields improved. The Committee noted that low cost production strategy (specially

in case of oilseeds) has been successfully adopted by some Asian countries such as Indonesia, Malaysia and Vietnam and recommends that cost structure and also other relevant parameters attained by these countries should be studied by DES/CACP so that this could be replicated in India.

5.1.5 Tariff Structure of Edible Oils

The current tariff structure on edible oils is given in the Table 5.5.

Table 5.5. Tariff Structure of Edible Oils

Name of the items	Present applied Rate of Tariff	Bound Rate of Tariff
(1)	(2)	(3)
Soybean oil (crude)	45%	45%
Soybean oil (refined)	45%	45%
Crude Palm Oil	65%	300%
RBD Palmolien and Refined Palm Oil	75%	300%
Rapeseed / mustard oil (crude)	75%	75%
Rapeseed / mustard oil (refined)	75%	75%
Sunflower and safflower oil (crude)	75%	300%
Sunflower and safflower oil (refined)	85%	300%
Other edible oils including coconut oil (Crude)	75%	300%
Other edible oils including coconut oil (refined)	85%	300%
Oilseeds	30%	100%

* Import of edible oils has increased to 5.3 million tonnes in 2003-04 from 4.26 million tonnes in the previous year. This has happened due to reduction in the international market prices of edible oils.

* Government has recently announced 10% reduction in the tariff rate of imported edible oils. Import of cheaper edible oils like CPO/RBD palmolien is likely to increase, especially in view of the prevailing low international market prices. It is apprehended that large-scale import will have adverse impact on the domestic prices of oilseeds. This may affect in a big way the oilseeds production programme.

* The data on wholesale prices of oilseeds indicates that the terms of trade have been moving against the edible oil sector as may be seen from Table 5.6.

Table 5.6. Wholesale Price Index

(Average of Weekly Base - 1993-94)

Year	Edible oils	Primary Products	All commodities
(1)	(2)	(3)	(4)
1994-95	111	116	112.6
2003-04	158	182	175.9

* The Committee is of the opinion that there is a need to ensure remunerative prices for oilseeds,

which cannot be achieved if cheaper imports are encouraged. Therefore, there is a need to raise import duty on edible oils. This would be possible in case of all edible oils other than soybean and mustard oils, for the applied and bound rates of duty are equal in case of soyabean and mustard oil.

The Committee has taken the note of the fact that the Scheme of Oil Palm Development Programme (OPDP) has been restructured and merged into a Centrally sponsored "Integrated Scheme of Oilseeds, Pulses, Oil Palm and Maize" (ISOPOM) from 2004-05. This contains some innovative features like contract research for development of drought resistance varieties, implementation of programmes on the basis of State Annual Plan and area specific project approach to the production programmes.

All major oilseeds excluding copra currently attracts a duty of 30% while copra carries a duty of 70%. Despite relatively low tariffs, very little import of oilseeds has actually taken place in recent years. However, duty levels on edible oils is more crucial than on oilseeds. Amongst edible oils, It is the duty on palm oil as well as soyabean oil which matter most. Palm oil, which is globally the cheapest oil and heavily imported in India currently attracts a basic duty of 75%, Soyabean oil, which is relatively expensive, carries a very low duty of 45%, which also happens to be the WTO bound level, as compared to 300% for other edible oils (75% for rapeseed/ mustard oil). According to World Bank data, world prices of palm oil varied in the range of \$285 - \$517 per ton. At compared to these prices, normative domestic cost of edible oils derived from the current MSP comes to about Rs. 38000 or \$775 per ton for rapeseed/ soyabean/ sunflower oil. Bank data, world prices of palm oil varied in the range of \$285 - \$517 per ton. As compared to these prices, normative domestic cost of edible oils derived from the current MSP comes to about Rs. 38000 or \$775 per ton for rapeseed/ soyabean/

sunflower oil and Rs. 52000 or \$1060 per ton for groundnut oil. Similarly based on current MSP of milling copra, cost of coconut oil works out to about Rs. 54000 or \$1100 per ton. It is clear from the above mentioned set of prices that MSP related domestic cost of edible oils are not adequately protected by the current levels of tariffs. The Committee recommends that tariffs on edible oils should be revised upwards for sustaining the assurance of Minimum Support Prices to oilseed growers.

5.1.6 Trade in Sugar

An interesting feature of sugar economy has been wild swings in sugar production as may be seen from the table 5.7:

Table 5.7. Fluctuations in Sugar Production In India

Fluctuations in Sugar Production (Range in lakh tonnes)	Nos. of years 1980-81 to 1989-90	Nos. of Years 1990-91 to 1999-2000
(1)	(2)	(3)
0 to 10	5	2
10 to 20	2	3
20 to 30	2	3
30 to 40	1	1
40 to 50	0	1

In the decade of nineties, sugar production fluctuations have been much sharper than the cane cycle. The larger regional swings, the larger swings in sugar as compared to cane production were bound to affect seriously the health of the Indian sugar and cane economy, its competitiveness and the sustainability of sugar production. The central consequence of this was shorter effective crushing seasons and much greater fluctuations in capacity utilization in the factory

sector. This in turn, reduced the recovery rate from the level otherwise possible and raised overhead costs. The result was wasteful use of International prices of sugar were US \$ 125 per ton in 1951 and US \$ 99 per ton in 1971 (Table 5.8).

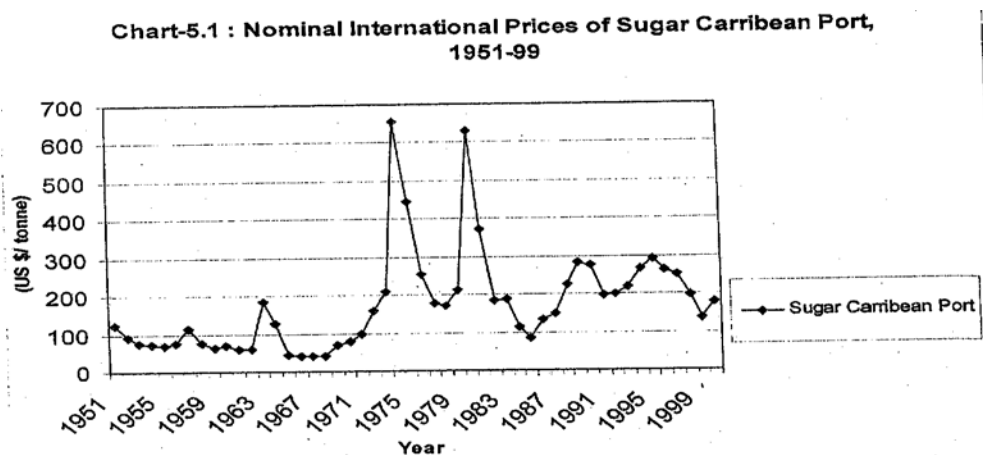
Table 5.8 Nominal International Prices of Selected Agricultural Commodities, 1951-2000

(US \$ Tonnes)

Year	Sugar Caribbean Port	Cotton Liverpool Index	Year	Sugar Caribbean Port	Cotton Liverpool Index
(1)	(2)	(3)	(4)	(5)	(6)
1951	125	-	1976	255	1707
1952	92	-	1977	178	1569
1953	75	-	1978	173	158
1954	72	-	1979	213	1699
1955	71	-	1980	630	2065
1956	77	-	1981	372	1850
1957	114	704	1982	185	1597
1958	77	665	1983	187	1825
1959	65	598	1984	115	1783
1960	69	620	1985	86	1320
1961	60	643	1986	133	1056
1962	62	626	1987	149	1649
1963	183	644	1988	225	1399
1964	126	650	1989	282	1673
1965	45	635	1990	276	1819
1966	40	622	1991	198	1694
1967	42	676	1992	200	1276
1968	42	678	1993	221	1278
1969	71	613	1994	267	1760
1970	81	637	1995	293	2165
1971	99	746	1996	264	1774
1972	160	799	1997	251	1745
1973	209	1368	1998	197	1443
1974	655	1435	1999	138	1170
1975	447	1169	2000	177	1291

Source: Trade liberalisation WTO and Indian Agriculture - Experience and Prospects, by Ramesh Chand (2002).

There were violent fluctuations in sugar prices during 1972 and 1975 after which new trends emerged (Chart-5.1). The last peak has been recorded in 1995 after which sugar prices plummeted to almost half by 1999.



The changes in tariff rates on sugar from 1994 to 2000 are given in the Table 5.9. other way with the high tariffs.

The reason on account of which tariff rates were kept low until 1999 is not quite clear. These were then revised and the country has gone the other way with the high tariffs. The table 5.10 exhibits production of sugar *vis-à-vis* import/ export and percentage of its availability.

Table 5.9. Changes in Tariff Rates on Sugar

1994-98	Nil
April 1998	5% plus counter availing duty of Rs. 850/ ton
January 1999	20%
Budget 99	25% plus 10% surcharge
December 1999	40% surcharge abolished
February 2000	60%

Table 5.10. Ratio of Import to Availability of Sugar in India

('000 Tonnes, Percentage)						
Year	Production	Import	Export	Availability*	% of Import to Availability	% of Import to Production
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1990-91	12047.00	12.10	200.82	11858.28	0.10	0.10
1991-92	13411.00	2.59	445.71	12967.88	0.02	0.02
1992-93	10609.00	1.34	485.10	10125.24	0.01	0.01
1993-94	9824.00	0.35	204.53	9619.82	0.00	0.00
1994-95	14643.00	1780.78	51.08	16372.70	10.88	12.16
1995-96	16429.00	150.63	863.72	15715.91	0.96	0.92
1996-97	12905.00	2.13	667.27	12239.86	0.02	0.02
1997-98	12844.00	346.91	173.28	13017.63	2.66	2.70
1998-99	15452.00	900.47	12.74	16339.73	5.51	5.83
1999-20	18193.00	1181.18	13.00	19361.18	6.10	6.49
2000-01	18510.00	30.40	338.69	18201.71	0.17	0.16
2001-02	18498.00	25.58	1456.45	17067.13	0.15	0.14
2002-03	20132.00	41.43	1662.37	18511.06	0.22	0.21
2003-04	13730.00	50.65	1184.64	12596.01	0.40	0.37

* Availability = Production + Import - Export

Generally exports and imports of sugar are allowed keeping in view the domestic demand-supply position. Due to regular cycles of surplus and deficit of sugar production in the country, India offers a prominent market for importers of this commodity as happened in 1994-95, 1998-99 and 1999-2000, for instance. The imports of sugar were generally very low and had a declining trend during 1990-91 to 1993-94. However, there was a sudden surge in the imports in 1994-95 when 1.78 million tonnes of sugar was imported. Then, there was a period of low imports in next three years before it reached a level of 0.90 million tonnes in 1998-99 and 1.18 million tonnes in 1999-2000. The spurt in import of sugar was a private sector response to low international price and liberal government policy rather than a conscious effort to bridge domestic demand-supply gap. However, import of sugar drastically declined and was

between 25 thousand tonnes and 51 thousand tonnes during next four years from 2000-01 to 2003-04.

Exports of sugar have fluctuated over the last fourteen years' period. India exported 864 thousand tonnes of sugar in 1995-96 which is the highest quantity exported during the last decade. However, it increased to 1.46 million tonnes in 2001-02 and further to 1.66 million tonnes in 2002-03 before declining to 1.18 million tonnes in 2003-04.

High tariff rates on import of sugar during 2000-01 and 2001-02, for instance, led to low imports of sugar to India despite the fact that the domestic production had not changed significantly. The Committee recommends that tariff policy in sugarcane should take into account imperfections in world prices.

5.1.7 Trade in Cotton

The International trade of cotton, like that of sugarcane, has been fluctuating (Table 5.11). Cotton is one of India's largest commercial crops, affecting millions of farmers, has a high cash input and is risky to grow. Yet, it does not

command as much attention of the Government as it deserves. This is evident from the fact that one of the most important documents such as "Economic Survey, 2004-05" has excluded raw cotton from agriculture imports in the main text despite the fact that its import is substantial.

Table 5.11. Ratio of Import to Availability of Cotton in India

(*000 Tonnes, Percentage)

Year	Production	Import	Export	Availability*	% of Import to Availability	% of Import to Production
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1990-91	1672.80	0.00	497.14	1175.66	0.00	0.00
1991-92	1650.70	0.00	160.34	1490.36	0.00	0.00
1992-93	1938.00	138.13	83.74	2012.39	6.86	7.13
1993-94	1825.80	3.82	312.56	1517.06	0.25	0.21
1994-95	2021.30	80.80	70.75	2031.35	3.98	4.00
1995-96	2186.20	69.62	33.28	2222.54	3.13	3.18
1996-97	2419.10	2.92	269.58	2152.44	0.14	0.12
1997-98	1844.50	9.97	157.53	1696.94	0.59	0.54
1998-99	2089.30	57.40	41.96	2104.74	2.73	2.75
1999-20	1960.10	237.40	15.91	2181.59	10.88	12.11
2000-01	1618.40	212.36	29.71	801.06	11.79	13.12
2001-02	1700.00	387.04	8.23	2078.81	18.82	22.771
2002-03	1482.40	233.85	10.81	705.45	13.71	15.78

* Availability = Production + Import - Export

The production increased from 9.84 million bales (1 ton = 5.88 bales) in 1990-91 to 14.23 million bales in 1996-97, registering an annual growth rate at 2.8 per cent. However, it declined to 10.85 million bales in 1997-98 and further to 8.72 million bales in 2002-03 before attaining a level of 13.47 million bales in 2003-04. India exported both long and short staple varieties of cotton during late eighties and early nineties. The country imported 0.80 lakh tonnes of raw cotton in 1994-95 which increased to 2.37 lakh tonnes in 1999-2000. However, it declined to 2.12 lakh tonnes in 2000-01, increased to 3.87 lakh tonnes in 2001-02 before coming down to 2.33 lakh tonnes in 2002-03. Some of the highest imports,

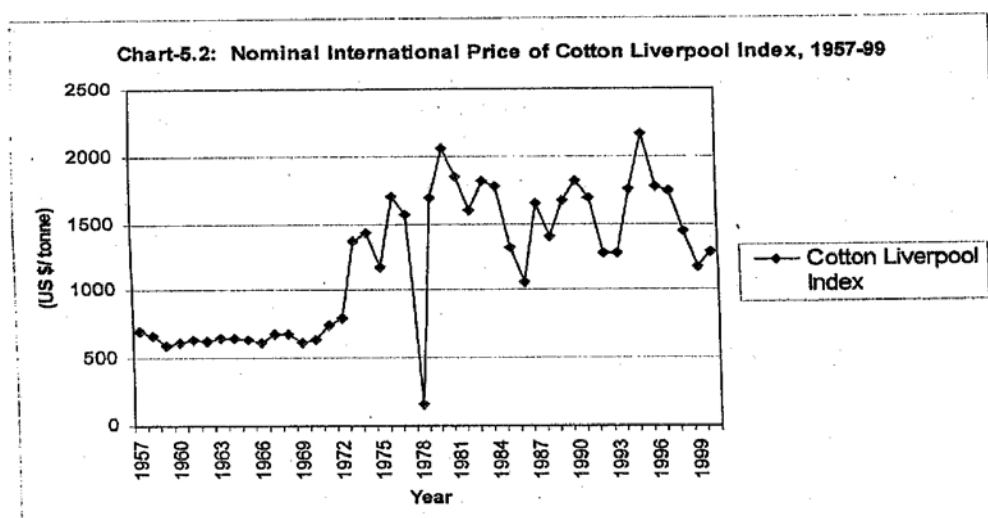
around 20% of domestic consumption have taken place during the last few years and consequently domestic stocks of unsold cotton increased. As the international prices of cotton have fluctuated (Chart-5.2), so has been the behaviour of quantity of Cotton Imported.

Given the fact that subsidy on cotton exports in the World runs at US \$320 billions, applied tariff rate at 5-10% on cotton in recent years has been low.

Currently, some aspects of Indian cotton suffer from various shortcomings such as poor fiber attributes, high trash content, high levels of contamination and rampant mixing of varieties,

causing inconsistency in quality. However, it is expected that following the launching of the Technology Mission on cotton, quality of Indian cotton would improve significantly in the next few years. Also, there are distortions in cotton trade. The Committee recommends that additional protection in the form of reasonable levels of tariffs be applied on cotton.

There are issues of supply of cotton to the textile industry in a phase which quotas have been abolished. These are Important. Policy can be to establish a level playing field between highly subsidized and domestic cotton for the Indian yarn manufacturer. This can of automatic setoffs for the producer.



Considering the fact that the MSP regime essentially reflects the cost of production of relatively low cost domestic producers, it is essential that levels of import tariffs be so fixed that these provide adequate protection to at least these producers. Here the role of CACP needs to be expanded to recommend levels of import tariffs.

As cost of imports (c.i.f.) of some of agricultural commodities or the derived products of such commodities is not stable, often violent, due to fluctuation in world prices, import tariffs be varied with world prices. Based on the logic of

minimum protection i.e. protection to relatively low cost producers necessary for sustainability of MSP 'regime as long as it is in the public policy domain, an automatic and transparent policy of variable tariffs on agricultural imports linked to the deviation of spot international prices from their long-run trends needs to be introduced.' Such variable tariffs are imperative not only for stabilization of prices of all agricultural commodities in open market but also for sustaining the MSP.

Introduction of a system of variable tariffs

would, however, require a new institutional arrangement under which world prices as well as import trends could be monitored on a real time basis and tariff calibrated accordingly. This would require review of tariffs more frequently than the current practice of doing this exercise annually on the eve of budget presentation or at the time of declaration of EXIM policy.

It is important that Government agencies appreciate the damage done to the Indian agrarian economy of the kind of import quantities shown in this report. Many agencies show so called low imports by ignoring, for example, cotton imports, sugar imports and edible oil imports. Also the impact of an inadequate policy regime since the early Nineties need to be recognized.

[5.2 and 5.3.1 to 5.3.3 not included here]

iii) Agricultural Price Policy and Food Management

Agricultural Price Policy has considerably influenced the marketing system of agricultural commodities in India. The policy was basically aimed at intervention in agricultural markets with a view to influencing the level of fluctuations in prices and price-spread from farm gate to the retail level. The objectives, thrust and instruments of agricultural price policy have undergone conspicuous shifts during the last fifty years. The policy has been instrumental in creating a fairly stable price environment for the farmers to induce them to adopt new production technology and thereby increase the output of foodgrains. The benefits of price policy and input/ food subsidies have been shared by all sections of the society, viz., surplus-producing farmers, farmers deriving their entitlement from production, other farmers who are net purchasers of foodgrains, landless labourers, urban consumers and the industry [Acharya, 1997, 2000].

However, some problems related to agricultural price policy and food management system have been identified as follows:

- * Apart from undue hikes in the levels of MSPs for rice and wheat, inappropriate timing of increase in issue prices of grains for PDS and improper meshing of export-import policy were responsible for accumulation of stocks with the government at some points of time. Currently the stocks are below or almost close to the minimum prescribed levels.
- * There is also a problem of ineffective implementation of price support operations for rice and wheat in states other than Punjab, Haryana, Western Uttar Pradesh and Andhra Pradesh, where surpluses have emerged during the last decade, but farmers could not get the minimum support prices for their produce. This happened mainly because the nodal agency (FCI) and state agencies in the new emerging surplus states are not geared to undertake price support operations. The FCI remains occupied with large volumes of purchases in traditional surplus producing states. This calls for reorganization of FCI into four regional offices which could be suitably located in east, west, north and south.
- * A statutory status should be assigned to the CACP and to MSPs so as to curb the tendency of fixing MSPs much above the rational level.
- * The system of price support purchases of cereals should be decentralized to make the price support effective in all the states. Specifically (a) in states like Punjab and Haryana, more responsibility should be given to state agencies; (b) FCI should concentrate its efforts in other states where state agencies are not fully equipped and geared; and (c) price support operations and subsequent disposal of coarse cereals be delegated to state governments, with financial back-up support from the centre.

- * There are several positive features of targeted PDS. The most important problems of leakages and subsidized grains not reaching the intended sections can be checked by publicizing the prices, list of targeted beneficiaries, and stock position of grains at fair price/ ration shops and village panchayat offices and making gram panchayats or local bodies responsible for monitoring.

5.5 IMPLICATIONS FOR AGRICULTURAL PRICE POLICY

The broad objectives of agricultural price policy to improve the economic conditions of farmers, to improve food and nutritional security at household level, to rapidly reduce the rural poverty and to make Indian agriculture globally competitive, can not be achieved without adequate emphasis on creating conducive environment by putting complementary policies in place. First, there is a need to dovetail trade and tariff policy with domestic agricultural price policy. Second, the measures suggested by various committees on agricultural credit and summarized in this chapter for evolving an efficient credit delivery system for the farmers will be critically important. Third, considerable changes and reforms in domestic agriculture marketing policies and programmes are necessary. The suggestions made in section 5.3 need to be expeditiously implemented. The Committee has given a counterfactual to show that such measures can be integrated with price policy. This is the central task ahead. Though support price policy has served the purpose of price insurance to the farmers, there is a need to expand the reach of crop insurance as early as possible. The Committee recommends that CACP should continue to monitor the complementary systems of trade, tariff, rural credit and marketing, insurance and related policy environment and incorporate its recommendations in the price policy reports submitted to the government from time to time.

The Committee has in a counterfactual below shown that achievable targets in instruments like tariffs, taxes, reduced effective interest rates and better marketing support can be integrated with pricing recommendations which are alternates with MSP increases. These should become the standard practice. This integration would be market friendly and WTO compatible in the sense that it would not show in AMS calculations and would serve the purpose of policy. The committee also recommends that this should be specifically incorporated in the revised ToR of CACP (as already indicated in section 3.10).

CHAPTER 6 EMERGING ISSUES IN FIXATION OF MSPs AND ESTIMATION OF COSTS

6.1 INTRODUCTION

The process of collection, compilation and generation of estimates of cost of cultivation and cost of production, the most important consideration for determining MSP, is fairly elaborate, transparent and is based on scientific methodology. As the MSP affects a wide cross section of farming community and agriculture traders, these stakeholders express concern from time to time on a number of issues. The important issues relating to the entire gamut of MSP are in this chapter.

[6.2 And 6.3 Not included here]

6.4 WHOSE COST?

6.4.1 Average, Marginal And Bulkline Cost

The foremost issue which arises in using the cost of production in deciding the level of MSPs is whose cost of production should be considered for this purpose. At present the Commission is guided by the weighted average cost of production estimated under the CS scheme from the daq records of sample farmers. By definition, the average cost is somewhere between the range of cost of production. If MSP is mechanically linked

to this average, it does not cover the cost of several farmers. Therefore, often questions are raised on the reliability of cost estimates. The problem arises mainly because there is considerable difference in costs from farm to farm and even among averages of state to state.

Though there is no mechanical linkage of MSP with any cost, yet it is important to analyse whose cost is more relevant for the purpose of MSP. There are two alternatives to the average cost of production, viz., marginal cost of production and bulk-line cost of production. The committee has analysed and compared all the three notions of CoP based on the estimates available from

CSScheme for four important crops in major producing states. The case studies pertain to paddy and wheat in Punjab, sugarcane and cotton in Maharashtra for the year 2000-01. Productivity being an indicator of efficiency, CoP was analysed by dividing the farmers in ten deciles according to the productivity levels.

6.4.2 Paddy in Punjab

The cost of production of paddy in case of the top 10% efficient farmers (highest productivity) is estimated at Rs. 349.55 per quintal for the year 2000-01 as against Rs. 663.35 per quintal incurred by the bottom 10% of farmers (Table 6.1).

Table 6.1. Relationship between Yield Rate and Cost of Cultivation of Paddy in Punjab-2000-01

Yield interval (Qtl./Ha.)	No. of holdings	Production (Qtl.)	Yield (Qtl./Ha.)	Expenditure (Rs./Ha.) on			Cost of	
				Labour	Machinery	Rent (imputed)	Cultivation (Rs./Ha)	Production (Rs./Qtl.)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
16.0-36.1	24	49.73	31.32	6448.79	1930.99	4882.00	20778.57	683.35
36.1-42.7	24	123.71	39.72	5046.80	2081.41	6333.67	20637.36	519.60
42.7-47.1	24	110.78	45.10	5432.73	1851.67	5351.17	21094.08	467.76
47.1-50.8	24	164.56	48.93	4879.93	2476.04	8442.52	22160.17	452.88
50.8-54.5	24	184.98	52.66	4511.45	2310.54	7049.26	22231.28	422.20
54.5-57.5	25	139.81	56.20	4877.47	1986.81	6381.48	22826.92	408.14
57.6-60.5	25	198.59	59.00	4072.77	2422.50	7769.21	24190.55	410.03
60.5-63.1	25	208.04	61.61	4306.13	2302.28	7904.03	22269.04	361.47
63.1-66.5	25	219.56	64.50	4374.86	2976.05	8250.66	23346.21	361.44
66.5-74.6	25	235.53	70.26	4319.07	2795.80	8723.00	24661.01	349.55
Average	245*	165.85	57.50	4798.49	2317.15	6829.05	22305.79	386.29

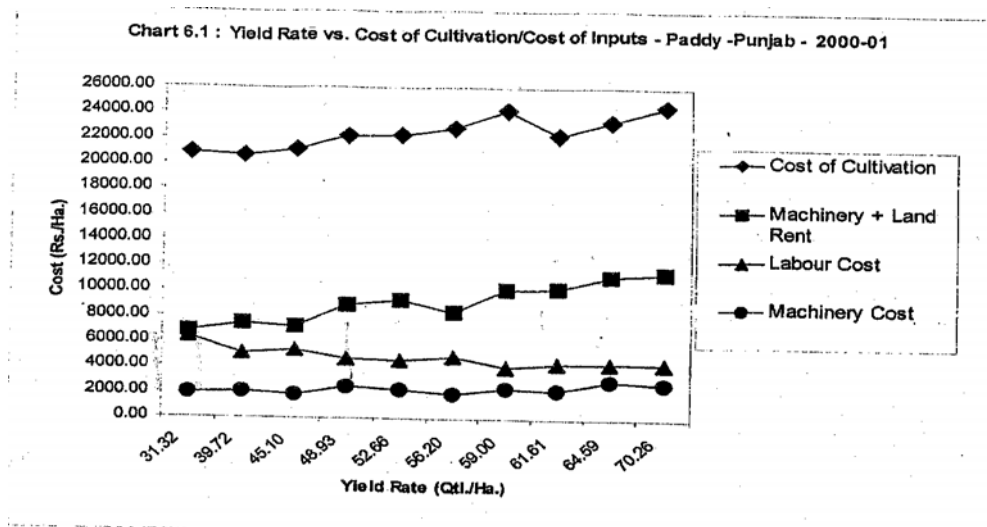
* Total number of holdings.

The following important points emerge from table 6.1:

- There exists a positive relationship between yield rate and cost of cultivation (Chart 6.1). As yield rate increases, the cost of cultivation also increases. This suggests that the farmers who cultivate their land at

lesser cost may not be adopting the best farming practices and thus not exploiting full potential of scarce resource like - land.

- The yield rate of the top 10% efficient farmers at 70.26 quintals/ hectare is more than double (2.2 times) compared to



- those of the bottom 10% farmers at 31.32 quintals/ hectare.
- iii. For producing one unit of the output, the bottom 10% of farmers incur 1.9 times of the cost incurred by the top 10%.
 - iv. The average cost of next 10% efficient farmers, i.e., in the efficiency range of 11th to 20th percentile work out to Rs. 361.44 per quintal. This cost is 94% of the average cost at the state level.
 - v. Farmers in the efficiency range upto 30th percentile are able to produce at a cost less than that of the state average.
 - vi. Farmers in the efficiency range of 81st to 90th percentile produce at Rs. 519.60 per quintal.
 - vii. The MSP at Rs. 510.00 per quintal for the corresponding year was higher by 46% of the average-cost of the top 10% of the farmers. The MSP during the year was 32 per cent higher than the state average cost of production.
 - viii. The MSP for paddy fixed by the government covered the cost of production of 90 percent of output in Punjab.

6.4.3 Wheat in Punjab

The cost of production of wheat in case of the top 10% efficient farmers is estimated at Rs. 412.43 per quintal for the year 2000-01 as against Rs. 549.15 per quintal incurred by the bottom 10% of farmers (Table 6.2).

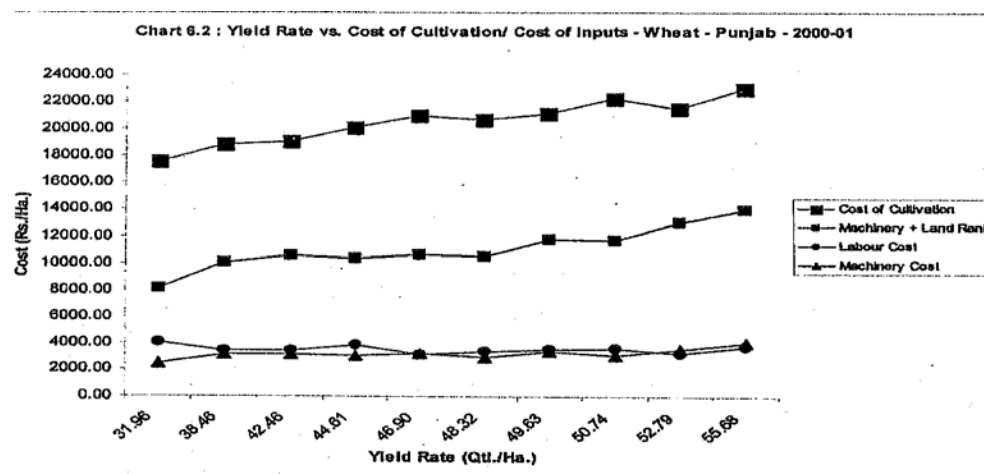
Table 6.2. Relationship between Yield Rate and Cost of Cultivation of Wheat in Punjab - 2000-01

Yield interval (Qtl./Ha.)	No. of holdings	Production (Qtl.)	Yield (Qtl./Ha.)	Expenditure (Rs./Ha.) on				Cost of	
				Labour	Machinery	Fertiliser	Rent (imputed)	Cultivation (Rs./Ha)	Production (Rs./Qtl.)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
14.0-38.2	30	80.15	31.96	4042.29	2467.23	2210.91	6667.48	17652.50	549.15
36.2-40.8	30	112.58	38.46	3412.77	3095.94	2305.31	6936.65	18858.00	490.36
40.8-43.2	30	139.73	42.46	3388.77	3122.06	2328.03	7416.63	19077.81	449.29
43.2-45.8	30	120.65	44.61	3805.86	3024.95	2373.42	7327.17	20112.86	450.88
45.8-47.6	30	154.96	46.90	3101.20	3202.14	2364.71	7400.30	20961.19	446.97
47.6-49.0	30	218.73	48.32	3345.39	2916.22	2548.98	7535.87	20690.81	428.20
49.0-50.2	30	147.46	49.63	3490.86	3334.67	2571.82	8375.79	21125.03	425.61
50.2-51.6	30	168.54	50.74	3521.02	3020.33	2522.48	8675.44	22197.04	437.47
51.6-53.9	30	173.15	52.79	3204.89	3483.77	2349.28	9483.71	21488.09	407.01
53.9-60.3	29	154.75	55.68	3683.36	4004.38	2510.08	9062.03	22984.09	412.43
Average	299*	147.04	47.80	3499.03	3164.27	2407.18	7889.16	20494.49	432.06

* Total number of holdings.

The following Important points emerge from Table 6.2:

- i. As in the case of paddy, there exists a positive relationship between yield rate and cost of cultivation of wheat. As yield rate increases, the cost of cultivation also increases. This suggests that the farmers who cultivate their land at lesser costs may not be adopting the best farming practices and thus not exploiting full potential of scarce resource like land.
- ii. The yield rate of the top 10% efficient farmers at 55.68 quintals/ hectare is 1.7 times compared to those of the bottom 10% farmers at 31.96 quintals/ hectare.
- iii. For producing one unit of the output, the bottom 10% of farmers incur 1.3 times of the cost incurred by the top 10%.
- iv. Farmers in the efficiency. range upto 50th percentile are able to produce at a cost less than that of the state average.
- v. Farmers in the efficiency range of 814 onwards percentile produce at Rs. 490.36 per quintal. Thus, bottom 20% efficient farmers produce at 113% of the average cost.
- vi. The MSP at Rs. 610.00 per quintal for the corresponding year was higher by 48% of the average cost of the top 10% of the farmers. The MSP was higher by 41% of the state average cost of production.
- vii. The MSP at Rs.610 for that year covered the cost of production of 99 (98.7%) percent of output In Punjab.



6.4.4 Sugarcane in Maharashtra

The cost of production of Sugarcane in case of the top 10% efficient farmers is estimated at Rs.

47.44 per quintal for the year 2000-01 as against Rs. 67.61 per quintal incurred by the bottom 10% of farmers (Table 6.3).

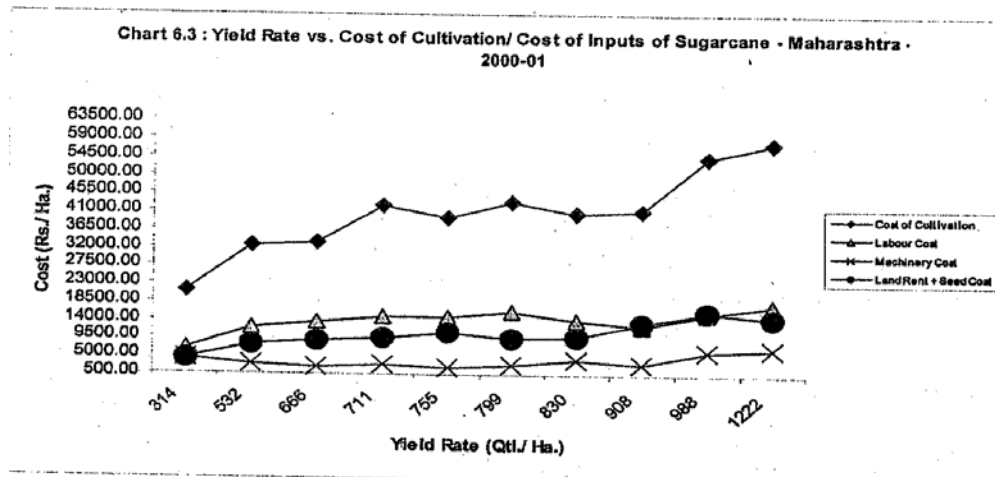
Table 6.3. Relationship between Yield Rate and Cost of Cultivation of Sugarcane in Maharashtra - 2000-01

Yield interval (Qtl./Ha.)	No. of holdings	Production (Qtl.)	Yield (Qtl./Ha.)	Expenditure (Rs./Ha.) on				Cost of	
				Labour	Machinery	Seed	Rent (imputed)	Cultivation (Rs./Ha.)	Production (Rs./Qtl.)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
150-400	11	328.18	313.91	6820.65	4506.27	1056.82	3427.66	21223.36	67.61
400-625	11	963.18	632.41	12229.36	2950.65	1583.1	6451.44	32402.88	60.86
625-683	9	837.98	665.65	13615.31	2200.87	1471.71	7478.85	33437.84	50.23
683-737	10	774.00	711.40	15048.35	3131.92	1885.77	7715.33	42499.49	59.74
737-783	11	602.77	755.18	15088.31	2351.61	2660.84	8262.58	39465.26	52.26
783-809	10	601.34	798.59	1627.59	2972.63	750.00	8793.13	43422.12	54.37
809-867	11	1252.73	829.62	14247.49	4388.00	1459.39	8563.43	40679.55	49.03
867-949	10	1311.40	907.54	12817.59	3473.65	3145.90	10359.32	41342.23	45.55
949-111	11	702.73	988.49	16105.59	6610.19	6218.08	10062.25	54516.46	55.15
1011-1567	11	1498.09	1222.48	18202.80	7284.82	3331.76	11540.93	57999.50	47.44
Average	105*	887.94	775.36	14033.71	4043.78	2385.44	8261.38	48303.82	57.72

* Total number of holdings.

The following important points emerge from Table 6.3:

- i. As in case of paddy and wheat, there exists a positive relationship between yield rate and cost of cultivation in case of sugarcane (Chart 6.3). As yield rate increases, the cost of cultivation also increases.
- ii. This suggests that the farmers who cultivate their land at lesser costs may not be adopting the best farming practices and thus not exploiting full potential of scarce resource like land.
- iii. The yield rate of the top 10% efficient farmers at Rs. 1222 quintals/ hectare is almost 4 fold (3.9 times) compared to those of the bottom 10% farmers at 314 quintal/ hectare.
- iv. For producing one unit of the output, the bottom 10% of farmers incur 1.4 times of the cost incurred by the top 10%.
- v. The average cost of next 10% efficient farmers, i.e., in the efficiency range of 11th to 20th percentile work out to Rs. 55.15 per quintal.
- vi. Farmers in the efficiency range upto 60th percentile are able to produce at a cost lower than that of the state average.
- vii. Farmers in the efficiency range of 610 to 90th percentile produce at Rs.60.86 per quintal and those in the range of 910 onwards percentile at Rs.67.61 per quintal.
- viii. The Statutory Minimum Price of sugarcane at Rs. 59.50 per quintal for the corresponding year was higher by 25% of the average cost of the top 10% of the farmers. It was higher by 3% compared to the state average cost of production of cane.
- ix. The SMP of cane at Rs.59.50 covered the CoP of 77 percent of cane output in Maharashtra.



6.4.5 Cotton in Maharashtra

The cost of production of cotton in case of the top 10% efficient farmers is estimated at Rs.

1606.59 per quintal for the year 2000-01 as against Rs. 4501.66 per quintal incurred by the bottom 10% of farmers (Table 6.4 and Chart 6.4).

Table 6.4. Relationship between Yield Rate and Cost of, Cultivation of Cotton in Maharashtra- 2000-01

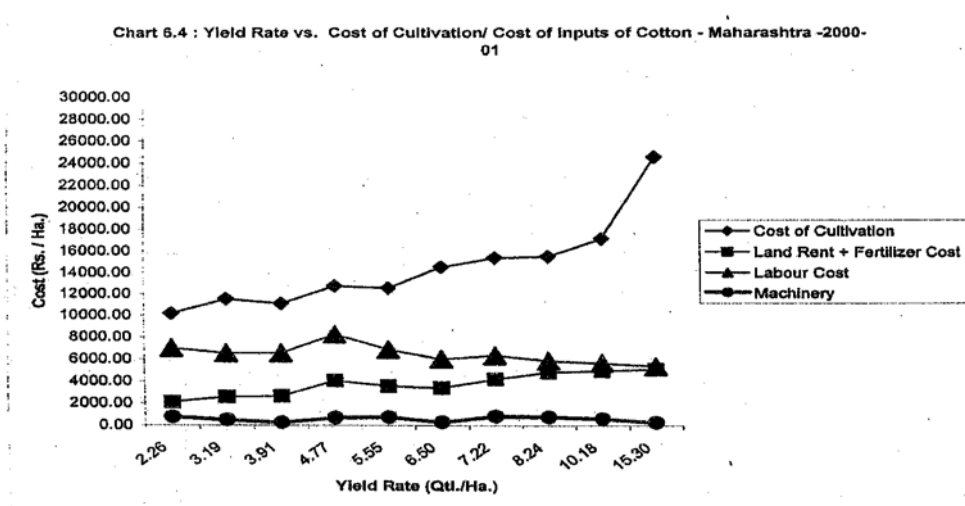
Cost interval (Rs./Qtl.)	No. of holdings	Production (Qtl.)	Yield (Qtl./Ha.)	Expenditure (Rs./Ha.) on				Cost of	
				Labour	Machinery	Fertiliser	Land Rent (imputed)	Cultivation (Rs./Ha)	Production (Rs./Qtl.)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1.7-2.9	25	3.77	2.26	7000.49	785.40	945.40	1182.72	10185.23	4801.66
2.9-3.5	26	4.29	3.19	8541.35	515.49	1208.14	1383.09	11536.39	3821.11
3.5-4.4	26	5.45	3.91	6549.11	283.91	1218.81	1439.57	11111.73	2839.72
4.4-5.1	25	8.06	4.77	8246.44	718.02	1523.33	2542.06	12743.15	2671.84
5.1-6.2	25	9.44	5.55	6871.44	764.55	1207.32	2352.76	12564.29	2261.97
6.2-6.9	27	9.48	6.50	6033.61	332.58	1360.68	2068.47	14542.78	2237.35
6.9-7.7	25	8.64	7.22	6337.34	872.98	1460.50	2757.52	15406.89	2134.24
7.7-9.2	26	10.19	8.24	5873.76	782.98	1613.53	3225.29	15543.18	1886.78
9.2-11.5	26	12.03	10.18	5650.06	628.51	1521.07	3420.14	17188.64	1687.68
11.5-22.2	25	25.28	15.30	5370.15	298.73	1629.79	3471.79	24574.05	1606.59
Average	256*	9.64	6.08	6439.55	595.53	1368.93	2380.55	14234.09	2268.83

* Total number of holdings.

The following important points emerge from Table 6.4:

- A positive relationship exists between yield rate of cotton and its cost of cultivation (also in other crops discussed in the preceding paragraphs) (Chart 6.4). As yield rate increases, the cost of cultivation also increases. This suggests that the farmers who cultivate their land at lesser cost may not be adopting the best farming practices and thus not exploiting full potential of scarce resource like land.
- The yield rate of the top 10% efficient farmers at 15.30 quintals/hectare is almost 7 fold (6.8 times) compared to those of the bottom 10% farmers at 2.26 quintals/hectare.
- For producing one unit of the output, the bottom 10% of farmers incur 2.8 times the cost incurred by the top 10% efficient farmers.

- Farmers in the efficiency range upto 60th percentile are able to produce at a cost lower than that of the State average.
- Farmers in the efficiency range of 81st to 90th percentile produce at Rs. 3621.11 per quintal and those in the range of 91st onwards percentile at Rs. 4501.66 per quintal.
- Given the fact that yield rate of cotton in Maharashtra during the year 2000-01 was abnormally low due to aberrant weather conditions which pushed up the cost of production, it is remarkable that the top 10% of the efficient farmers were still able to produce cotton at a cost lower than the MSP at Rs. 1625.00 per quintal (J-34 variety) for the corresponding year.
- The MSP of kapas at Rs. 1625 covered the CoP of only 27 percent of cotton output in Maharashtra.



6.4.6 The Issue

The analysis above is in conventional terms. It does not separately analyse the cost behaviour of efficient and inefficient farmers in terms of productivity and hence essentially misses the question of the economic environment required to let the Indian farmer compete in a globally competitive economy. In the background of what has been stated above, a sensible approach would be to try to establish a roadmap of economic policies for a few major crops and see if feasible alternatives exist in terms of an economic environment in which Indian agriculture can achieve a faster growth rate, improve profitability and raise investment. That is the only logical course. In a liberalizing economy, otherwise agriculture will be left out of the process of reforms, with serious negative consequences. Historically in India, the mideighties saw the first transition from a regime with output, investment, technology and import control at the commodity level to a regime which would use fiscal and not quantitative controls. In 1985, India designed an extensive programme of reform emphasizing internal

competition initially. In the mid-eighties around two-thirds of organized Indian industry was removed from price and quantitative controls to tax and tariff rate interventions. From firm level controls the economy moved to industry level interventions with strong schemes of Incentives and disincentives. These would discriminate between industries, but not between firms. The policy framework was seen as a transitional regime, leading later in the early nineties to uniform and low tariff rates and freely convertible exchange rates.

The Committee recommends that a roadmap for principal crops not based on historical costs but opportunity costs at the margin be developed so that technological progress and India's competitive advantage such as bright sunshine and cheap labour are given a free reign to play. The capital cost for such an economy at the margin would be higher than the historical, costs, But current output costs would be lower per unit of output, although they would again require larger working capital requirements.

The Committee recommends that CACP should regularly analyse average cost, marginal cost and bulk line cost in formulating its recommendations on the level of MSPs as described below.

6.5 WHICH COST?

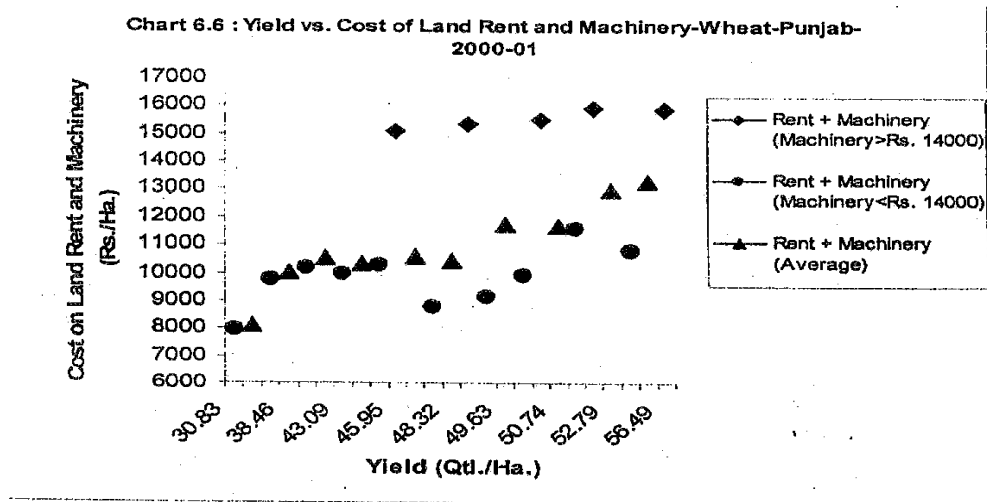
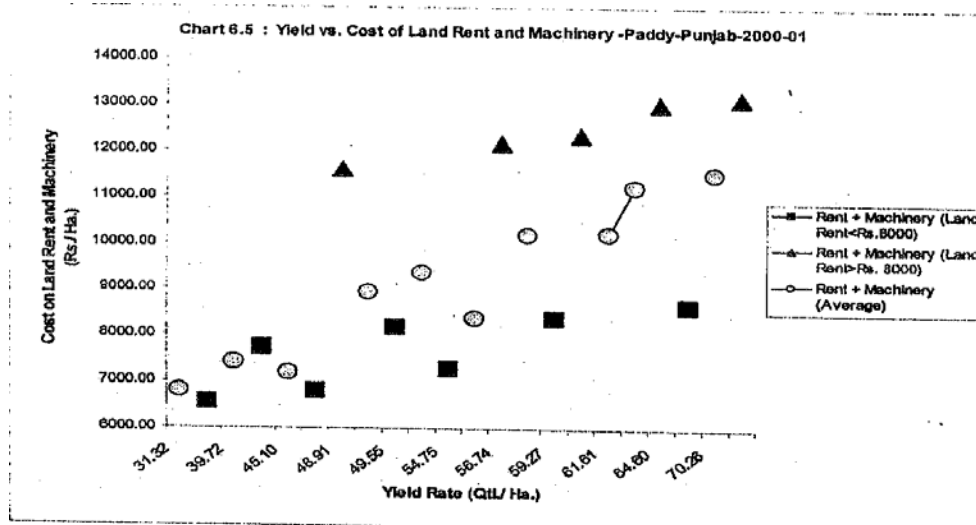
- * Fixed capital formation in the public sector in agriculture at constant prices is less in the nineties as compared to the absolute level reached in 1976-77. The disastrous nineties for agriculture must be reversed. First public capital formation will rise by around five thousand crores, If the States respond to the Central initiatives. This will reach earlier levels not seen in any year in the nineties. Second, together with this, credit for land and water development should revive stagnant private investment. Public-private partnerships for diversification in each agro-climatic sub-region and improved productivity in the appropriate crops are necessary.
- * Agricultural profitability and private investment fell, because India globalised without preparation. Income, output and then employment went down in agriculture. Rural urban inequality went up. A Road map is essential for each crop to reverse the profitability trends. Initial capital requirements of progressive farming, lead to costs around a sixth higher as compared to the "average" procurement prices. Tariff, tax and monetary policies must make the difference. [Alagh, 2003] Each region has to lobby with facts for its crops.

- * The farmer must be supported to shift to a competitive cost regime through technology and economic support. For that his capital cost will be higher, although current costs will be lower.

- * To make the agriculturist competitive, the farmer has to be supported in terms of the cost of production of efficient farming. These costs monetize existing practices, meet the immediate costs of technology adoption and learning and are sometimes embodied in new inputs. Many of them are of immediate nature and after an Initial thrust and support, the farmers would be able to compete on their own.

The efficiency shifters in case of paddy in Punjab, wheat in M.P., sugarcane and cotton in Maharashtra for 2000-01 are depicted in Charts 6.5 to 6.8.

The average yield for the higher rent and machinery category of paddy farmers in Punjab was 57.5 quintals/hectare but for the lower rent and machinery category was 51.1 quintals/hectare for the year 2000-01. Cost of production per quintal for higher rent and machinery cost at the mean level was Rs. 431 per quintal, but for the low yield, low rent and machinery costs was Rs. 391 per quintal. There is a ten per cent difference. If average costs of both kind of farmers are taken into account for price setting, the competitive farmer will never get the incentives to expand and the low yield farmer to modernize and become competitive. it maybe noted that the earlier analysis misses this aspect completely on account of a static framework of analysis.



In the Wheat example the average yield per quintal was Rs. 462.02 for the high rent of the low cost producers was 45.9 quintals/hectare, while that for the high rent, etc., category. In other words the difference was 51.6 quintals/hectare. The cost 7.51%.

Chart 6.7 : Yield Vs. Land Rent and Cost of Seed - Sugarcane - Maharashtra - 2000-01

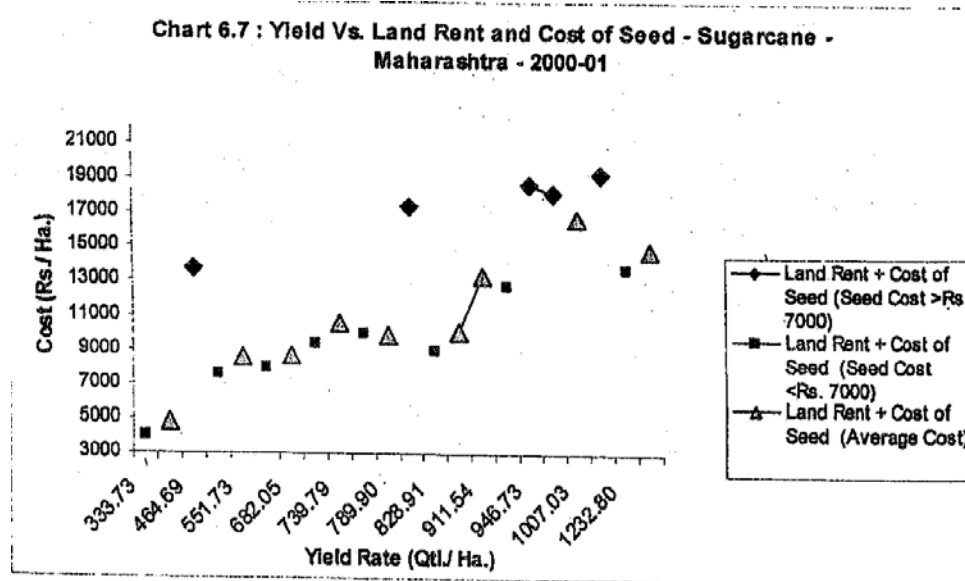
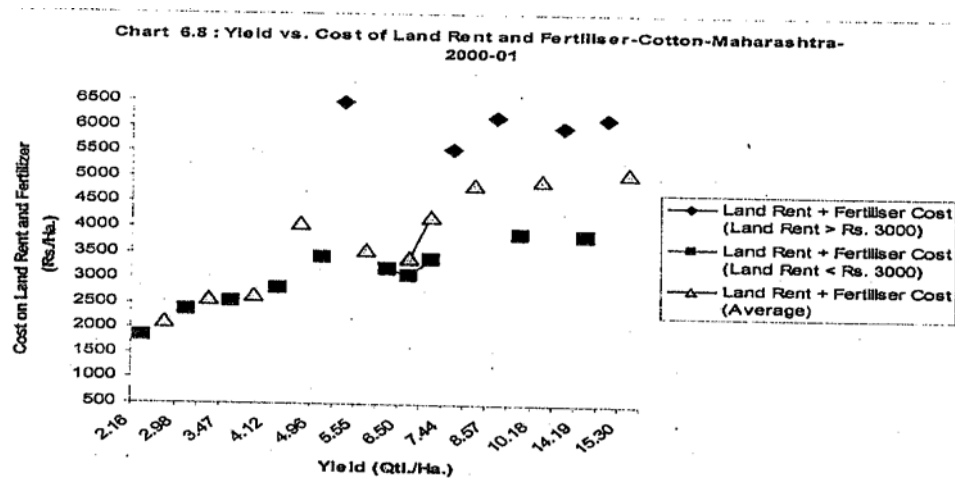


Chart 6.8 : Yield vs. Cost of Land Rent and Fertilizer-Cotton-Maharashtra-2000-01



For sugarcane and cotton the Committee with the limited time at its disposal could not identify the proper shifters and do the analysis. The limited nature of technological progress in these crops may also have been a problem. However given time this can be successfully attempted by an agency like the CACP, including the use of experimental data.

To make the agriculturalist competitive, the farmer has to be supported in terms of the cost of production of efficient farming. These costs monetise existing practices, meet the immediate costs of technology adoption and learning and are sometimes embodied in new inputs. 'Many of them are of immediate kind and after an initial thrust and support, the farmer will compete on its own. The Committee recommends a variant of the principle of Long Range Marginal Cost (LRAM), adopted for the reform of Industrial pricing in India and currently used for fertilizer pricing as recommended first by the CERC for power pricing, should be considered for analysis and development pricing and economic policies in the Road Map for agriculture. The farmer must be given incentives of pricing and non-pricing nature to internalize these costs in a transitional regime for a well defined and limited period. Higher level policies of support have to be implemented to meet the costs of a competitive agriculture in the medium term of three to five years.

- * It may be recalled that the LRMC principle requires the capital cost to be worked out in real and not accounting terms and the current costs to be worked out for the efficient technology.
- * An earlier stylized example to illustrate this principle worked with aggregated data, rather than the direct estimates given above.
- * Some tehsils had per hectare seed costs higher than the state average, suggesting a possible technical superiority leading to a cost and productivity advantage. In the

existing policies no allowances are made for higher capital costs and internationalization of technological superiority.

- * With this stylized data the desirable economic profiles for paddy were worked out under two assumptions- an interest rate for long term investments of 7.25% which would follow from RBI Governor Y. Venugopal Reddy's monetary policy announcement, if operationalised on the field and an existing Business As Usual (BAU) rate of 14.5%. Similarly, the Interest rate for working capital is ideally 9.75% and a BAU rate of 19.5%. The outcomes are:

S.No.	Cost Item	Normative Monetary Policy	BAU
(1)	(2)	(3)	(4)
1.	Return on Net worth	77.30	77.30
2.	Return on Term Loan	27.05	54.10
3.	Interest on Working Capital	26.00	52.10
4.	Depreciation	129.20	129.12
5.	Input cost	400.00	400.00
6.	Total	659.61	712.66

The concept of efficiency shifters as described above is a variant of this argument. The important point is that tariff, monetary and tax policies can be integrated in a measurable sense with the desirable price environment to be provided to the farmer.

The efficiency or LRMC price, follows from these arguments. In each case a Road Map has to be built up for describing the environment for a progressive and competitive agriculture.

- * The Road Map has to be for monetary, tax and technology policy support for competitive agriculture.

- * The argument is that these have to be used as shifters to permit farmers to move to a globally competitive agriculture. If a credible support system is not there, a WTO compatible agriculture will remain a dream.
 - * The numbers are illustrative in this report.
 - * The budget for 2005 talks of a road map for crops.
 - * It gives it for cut flowers in the years we are talking about the procurement price of paddy was around Rs. 6 per Kg.
 - * A low procurement price is consistent with government support as a matter of last resort.
 - * Other crops to follow.
 - * 55 paise of the normative price can be shaved off with a more appropriate monetary policy or about 8% of the total price. If the tariff policy assumptions are not made the required price would be Rs. 7.13 per kg.
 - * Tax and monetary policy reform can account for around 23% of the fiscal cost of the package as compared to a price support programme alone.
 - * We can't at all swear by the calculations made, although they look plausible. But it should be possible to hone them if a Government think tank was working on them. Policies could be worked out for different crops and a road map of reform prepared. The least we would do is to show the rocky road to reform. It is of some importance that we have a perspective of the direction in which we want to move and the policy degrees of freedom are used in a coordinated manner for that purpose. All this will have to be done within a global perspective on macro policies for agriculture.
 - * Agriculture profitability and therefore private investment fell in the last decade because we globalised without preparation. As cotton, oilseeds and sugar production went down, income, output and then employment went down in agriculture. Urban inequality went up in a big way. Manufacturing output and infrastructure collapsed.
 - * Agricultural diversification and structural change in the labour force did not proceed beyond the early nineties levels.
 - * These trends must be reversed by policy.
- Apart from whose cost (average, those at the margin or those at 80% margin of production), there is another question of which cost to be considered for deciding the level of MSP.. Should the support price cover only the paid out costs or all the costs including the imputed values of owned land, imputed interest on own capital, imputed value of family labour and imputed remuneration for the management function of the farmer. Specific difficulties arise and questions are raised in the form of imputation of the values of farmers own resources. As regards the management input of the farmer, some argue that the return to management is determined by the profits and as such, it should not be made a part of the cost. The committee has noted that currently the cost concepts used by Des and CACP include all these costs such as A_2 , C_2 , C_2^* and C_3 . The committee recommends that the CACP should continue to take into consideration all the cost concepts, i.e., A_2 , C_2 , C_2^* and C_3 while formulating its recommendations on the level of MSPs.

6.6 USING MSP TO PROMOTE QUALITY

The commodity price data base of the World Bank gives figures of prices of rice for four varieties. As regards wheat, the prices are quoted for three varieties. For ready reference the relevant figures for January 2005 are given in Table 6.5:

Table 6.5. Commodity Price Data - January, 2005

Category/Variety	Price	
	US \$ per quintal	Rs./Qtl.
(1)	(2)	(3)
Rice		
Rice, Thailand, 5%	28.6	1252.7
Rice, Thailand, 25%	26.8	1172.6
Rice, Thailand, 35%	26.4	1155.1
Rice, Thai, A1.Special	22.5	984.5
Wheat		
Wheat, Canada	20.4	893.5
Wheat, US, HRW	15.4	672.1
Wheat, US SRW	14.3	623.5

It is true that the number of varieties for which CACP recommended MSP earlier in respect of rice was three, namely, Common, Fine and Superfine as against the prevailing two varieties, namely, common and Grade A. The reduction from three to two varieties w.e.f. 1997-98 was effected on account of the problems faced by FCI with regard to standards for classification of fine or superfine varieties in terms of length/breadth ratio. It is also true that the High Level Committee on Long Term Grain Policy recommended only one variety of paddy for MSP fixation.

However, in view of the measures being taken to promote market reform at State level in our country and also the Budget proposals to upgrade

our standardization / grading infrastructure vis-a-vis world/WTO standards, the Committee recommends that the CACP should consider quality aspects in its price and non-price recommendations while recommending the level of MSPs for various commodities to induce farmers to produce better varieties of commodities covered under the MSP regime and to integrate policy with market economy. Market assessments of quality must be taken into account.

6.7 EFFECTIVE IMPLEMENTATION OF PRICE SUPPORT POLICY

The instrument of MSP envisage applicability of the benefits under the Scheme across the board. However, the Committee has observed that the existing system of price support operations, especially in case of rice and wheat, has remained concentrated in a few states while in several other states where surpluses have started emerging, the price support has not been effective.

Table 6.6 shows that disproportionately less procurement of rice took place in states like Tamil Nadu and West Bengal. Likewise, procurement of wheat in two states of Uttar Pradesh and Rajasthan was inadequate. In several other commodities also, for which MSPs are announced, the cases of ineffective support operations continue to be reported from different states.

Table 6.6. Procurement of Rice and Wheat During 2001-02 to 2003-2004 (According to Marketing Year)

(Lakh Tonnes)						
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Rice						
Punjab	72.83	79.40	86.62	96.56	37.94	10.94
Andhra Pradesh	64.26	26.23	42.30	89.53	56.47	21.08
Uttar Pradesh	19.36	13.60	25.54	130.19	67.66	35.82
Orissa	12.53	8.90	13.73	68.02	73.88	43.53
Haryana	14.84	13.24	13.34	27.93	79.52	46.69
West Bengal	0.48	1.26	9.25	146.62	83.57	63.30
Tamil Nadu	8.52	1.07	2.07	32.24	84.48	66.95
Madhya Pradesh	2.74	1.59	1.12	10.80	84.97	68.86
Others	25.73	18.82	34.31	274.96	100.00	100
All-India	221.29	164.11	228.28	882.85		

(contd.)

Table 6.6. (Concl.)

(Lakh Tonnes)

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Wheat						
Punjab	105.60	98.63	89.38	144.89	58.57	20.09
Haryana	64.07	58.88	51.20	91.34	88.97	32.76
Uttar Pradesh	24.46	21.11	12.13	255.67	96.85	68.22
Rajasthan	6.76	4.61	2.51	58.76	98.24	76.37
Others	5.41	7.03	2.78	170.42	100.00	100
All India	206.30	190.26	158.00	721.08		

*: As on 30.09.2004 In case of rice.

#: Refers to Cumulative Percentage for 2003-04.

@: States have been arranged in descending order of procurement during 2003-04.

It is, thus, evident that benefits of MSP Scheme bypass a large cross section of farmers. The Committee is of considered view that procurement should not be concentrated in a few selected States but it should have all-India character in true sense. To accomplish this objective, the Committee recommends that

- (a) For effective implementation of MSP policy in all parts of the country, FCI, NAFED, CCI & JCI should be restructured so that price support operations become effective in all parts of the country and do not remain confined to a few selected regions; and,
- (b) Responsibilities of national nodal agencies and concerned state governments in the matter of advance planning and implementation of price support policy should be clearly delineated.

6.8 TREATMENT OF MARKETING AND TRANSPORT COSTS

According to the existing practice, cost of production at field level is taken into account while recommending the level of MSP. After production at the field level, farmers do incur transportation charges, marketing charges and processing/ storage charges. There have been suggestions to include These costs while recommending MSP. Although transportation cost is not a constituent of cost of production, it is a cost of distribution. Nevertheless farmers incur this

cost while taking their produce to the market for sale. The Committee has noted that a preponderate proportion of farmers' produce is sold at mandis rather than at the farm gate. The transportation cost, therefore, needs to be considered while deciding the level of MSP. Likewise, marketing charges/ cess, wherever these are paid by farmers, should also be considered while deciding the level of MSP. The Committee recommends that

- (a) estimates of marketing and transport charges incurred by farmers should be generated at least once in three years; and
- (b) CACP should take these into consideration while formulating its recommendations on MSPs.

6.9 ISSUES RELATED TO INTEREST RATE

According to the existing practice, DES applies normative rate of interest at 12.5% on working capital and 10.0% on the fixed capital. Considering the fact that a large proportion of farmers resort to non-institutional (such as money lenders) loans who charge higher rate of interest, the Committee recommends that the rate of interest which is actually paid by farmers (and not nominal rate of interest) on credit should be taken into account by DES while estimating the

cost of production. This needs to be computed from survey data itself rather than the pre-determined rate of interest.

The Committee also noted that the existing software FARMAP employed by DES is not equipped to estimate cost of cultivation/cost of production on the basis of actual rate of interest paid by farmers on the loans taken from different sources. It has been noted that the DES has been employing an outdated software "FARMAP" which has its limitations. **The Committee recommends that the DES should take necessary steps to replace the existing software with a new one with latest features so that full potential of the data collected under the CS Scheme is exploited. Once new software is put in place, it would also enable DES to switch over from normative rate of interest to actual rate of interest paid by farmers.**

6.10 ISSUES RELATED TO DURATION OF INTEREST ON WORKING CAPITAL

According to the existing practice, interest on working capital is calculated for half of the crop period for estimating the cost of working capital. The rationale for such a practice lies in the fact that farmers employ working capital in a staggering manner, spanning from sowing to harvest period. When it is hypothesized that the expenditure pattern of loan amount is uniformly distributed over the crop season, it is mathematically equivalent to having used the loan amount for only half of the crop period. On this premise, only half of the crop period for calculation of rate of interest at present is considered. Increasingly the farmers are required to arrange for majority of the inputs (seeds, manures and fertilizers) in advance of the sowing season. Keeping these in view, the Committee recommends that the CACP and DES should jointly conduct a study to ascertain the actual spread of expenditure vis-à-vis borrowings during the crop season.

6.11 ACCOUNTING FOR RISKS IN FARMING

Agriculture is an 'industry' under open sky which is a risky entrepreneurship. It is a gamble in the monsoon as only 40.2% of the gross cropped area is irrigated. Besides, risk creeps in due to pests and diseases. Thus, this sector requires some extra inducement for investment. It is noted that economic theory treats risk bearing as an entrepreneurial function which is rewarded in profit and since profit is not a part of cost but is the differential between price and cost, profit does not determine price but is determined by price: Risk is not an item of cost and consequently it is not a determinant of price of product. Thus, inclusion of an arbitrarily determined component for risk in the cost estimate has no validity in terms of economic principle. On the basis of this principle, no allowance may be added to the total cost on account of risk and uncertainty as these are supposed to be covered by profit. It is, however, observed that while price risk is supposed to be covered by implementation of MSP policy, if the scheme of crop insurance is implemented to provide for risk coverage in farm business investment, then actual paid out premium is a cost item and should be so treated. The Committee recommends that data on premium actually paid by farmers for crop Insurance should be regularly collected and be included in the cost estimates.

6.12 USE OF YIELD IN COMPUTING CoP

Data show that yield rates generated from the study on cost of Cultivation are generally higher than those derived from CCEs (Crop Cutting Experiments). A suggestion has been made to adopt the yield rates based on CCEs while generating estimates of Cost of Cultivation. In this context, it is pertinent to note that there exists an inverse relationship between cost of production and yield rate which is given by

$$\text{Cost of Production} = \frac{\text{Cost of Cultivation (per hectare)}}{\text{Yield rate (per hectare)}}$$

Thus, lower yield rates push the CoP upwards.

The above proposition amounts to blending of data from two entirely different settings (one being the CS Scheme and the other from CCEs). This is not prudent and statistically appropriate. In this context, the following observations of Sen⁷ and Bhatia (2004) are noteworthy:

"Differences in yield estimates as between those generated under the scheme (CS estimates) and those generated through crop cutting experiments (official estimates) need not imply, that official yield estimates are always true and CS wrong, (e.g., CS cotton yields are closer to those of the Cotton Advisory Board), and for the vast majority of cases the hypothesis that both official and CS yields pre drawn from the same population cannot be rejected statistically. Further, changes over time are very similar between CS and official yield estimates, so that derived index numbers from the two sources agree.

"Official and CS aggregates for important inputs agree, e.g., the CS estimate of aggregate fertilizer use during the 1990s averaged only 4 per cent higher than official consumption estimates. This lends confidence to CS cost estimates which also agree with official data on both levels and trends in fertilizer prices and wage rates."

The Committee is of view that the data collected under CS Scheme are of fairly good quality and it will not be statistically sound to blend the

yield rates from any other source with the data collected under the Scheme. The Committee recommends that the existing practice of deriving the yield rate from the CS scheme should continue.

6.13 CROP COVERAGE

The crops covered under the CS Scheme are mostly the ones which are presently covered under the 'domain of MSP. The Committee has taken cognizance of the emphasis laid on horticulture crops by Hon'ble Finance Minister in his budget speech on 28.02.05. However, It is noticed that the coverage of horticulture crops under CS Scheme is rather limited. In view of conscious policy of the Government to encourage diversification of agriculture, it is expected that there would be more requests from State governments and also from farmers' representatives for price support mechanism such as Market Intervention Scheme (MIS) for a larger number of horticulture crops. To enable the DES to positively respond to such justifiable/ foreseeable demands, it is recommended that DES should explore the possibility of expanding the crop coverage to certain fruits and vegetables such as tomato, cauliflower, cabbage, ginger, turmeric, apple, pineapple, mango, banana, grapes and citrus fruits (potato and onion are already under the Scheme) and build up strong and sound data base on cost of cultivation / cost of production of these horticultural crops.

7. Sen, Abhijit and Bhatia, M.S. (2004).

COMMITTEE ON AGRICULTURE (2013-2014)
FIFTEENTH LOK SABHA MINISTRY OF AGRICULTURE
(DEPARTMENT OF AGRICULTURE AND COOPERATION)
PRICING OF AGRICULTURAL PRODUCE
SIXTIETH REPORT LOK SABHA SECRETARIAT
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CHAPTER III Cost Estimation

(i) Methodology for estimating the cost of production

The Commission for Agricultural Costs and Prices (CACP), which is an independent body of experts considers, among other factors, the costs of production of various crops for all the major producing States, as collected by different State Agricultural Universities under the Comprehensive Scheme for the Study of Cost of Cultivation of Ministry of Agriculture. The sample size consists of 8,400 holdings. The sample covers the different regions of the country. Thus, CACP considers the cost of production of crops in different States, while recommending the MSPs. The Commission also considers the costs data as submitted by State Governments.

3.4 From time to time, expert committees were constituted to revise the methodology and system of calculation of the cost of cultivation/ production of agricultural produce, to arrive at MSPs. The Government had set up an Expert Committee under the Chairmanship of Prof. Y.K. Alagh in May 2003 to examine the methodological issues in fixation of MSP. On its recommendations, the premium actually paid by farmers for crop insurance and marketing and transport charges incurred by farmers have also been included as items of cost for recommending MSP.

3.5 While making projections, the data for the latest available year are treated as the base. The total input cost is broadly divided into two parts: variable input cost and fixed cost. Because of its greater significance in the total cost, the Commission concentrates more on updating the estimated variable input cost items. After constructing the individual price indices for each of the variable inputs, a composite weighted index is constructed. While explaining the factors comprising the composite index, the DAC stated as follows :-

"Commission for Agricultural Costs and Prices (CACP) arrives at the likely levels of cost of production in different states on the basis of latest cost of cultivation/production data available. In order to make the projections consistent and as accurate as possible, the latest three years data pertaining to each state is projected and their projected averages are taken. To carry out the projection exercise, state specific composite variable input price index is constructed to capture the movement of input prices between the base year and the year of projection. Lastly, the all India weighted average cost is computed, with weights being the shares of production of each state in the total production".

Elaborating further the projection of costs the DAC stated as follows:-

"The share of each of these variable inputs in the total operational cost, prevailing in the base year, is taken as the weight for each specific input. This composite weighted input price index thus measures the likely changes in variable input prices for each of the later years in relation to the base period. The increase in variable input price index over the base period is then used for projecting cost. The interest on working capital is worked out separately on the projected variable cost net of interest on working capital, and then the same is added to arrive at the total projected variable cost per hectare. Further, the apportionment of total cost of cultivation between the main product and the by-product is done in proportion to their contribution to the total value of output. For fixed cost, the main components considered are the rental value of owned land and interest on fixed capital. Both these fixed cost items are taken as imputed values implying that farmers do not make any cash payments for them".

(ii) Cost of cultivation/production

3.6 The cost of cultivation/production includes all paid out costs, such as those incurred on account of hired human labour, bullock labour/machine labour (both hired and owned) and rent paid for leased in land besides cash and kind expenses on use of material inputs such as seeds, fertilizers, manures, irrigation charges including cost of diesel/electricity for operation of pump sets etc. Besides, cost of production includes imputed value of wages of family labour and rent for owned land. The cost also covers depreciation for farm machinery, building, transportation and insurance charges. As such, the cost of production covers not only actual expenses in cash and kind but also imputed value of owned assets including land and family labour.

3.7 A former Chairman of CACP pointed out that the methods of data collection is questionable and stated as follows, during his personal hearing:-

"the farmers will not get justice from the approach that we normally follow in the CACP. I say this because I have seen this closely working using the same methodology that is being followed by the CACP and I tried to alter it. I succeeded to a certain extent in the last years but again it was changed. I do not know about it now. At least my concern still remains.

Then the methods of data collection and cost calculation also are questionable because the data for this purpose, that is, the data on cost cultivation, is collected by the Directorate of Economics and Statistics with the help of several State Agricultural Universities.

Two problems come into this aspect. First of all, some State Agricultural Universities say that sometimes money comes through the State Government and so, they do not get money on

time. If they have to go to the field for data collection and supervision of data collection, they have no funds. They cannot even send a person with Rs. 1000 to the field to see whether the data collection is done properly or not. This is one thing which happens in some cases. I tried to check it in Bihar and then suggested change in it. In Karnataka also, the same problem was there. We asked the Directorate to give some additional money for them on ad hoc basis".

[3.8 TO 3.11 not included here]

(iii) Factors in the cost of production

3.12 The estimates of cost of cultivation/production in respect of the major producing states of a particular crop covered under the scheme are taken into consideration for arriving at a weighted all India average cost of cultivation/production. Since for a single crop there is one uniform MSP for the whole country, CACP tries to ensure that the MSP recommended covers the C2 cost of production, (i.e., actual expenses in cash and kind, including rent paid for leased-in land, and imputed value of wages for family labour, depreciation of farm machinery and buildings, rent for owned land and interest on fixed capital) in relatively more efficient / well-endowed States and A2 + FL costs (actual expenses in cash and kind, including rent paid for leased-in land, and imputed value of wages of family labour) in relatively less efficient/less-endowed States.

[3.13 to 3.17 not included here]

the Chairman CACP:-

"I will give you one example of Maharashtra particularly because cost of most of the commodities in Maharashtra and Karnataka is very high".

He added :-

"In Maharashtra the biggest problem is that their irrigation level are only 11%. In cotton, in Vidarbha, where the problem took place and they were asking for MSP of Rs. 6000, I said, at Rs. 6000, Gujarat will not be growing anything else but only cotton. So, where your cotton will go? It is because, Gujarat has 50 per cent land under irrigation. Maharashtra, the Vidarbha belt is only 5 per cent under irrigation. Their productivity is half of Gujarat. So, if you want to give double price to Maharashtra farmers, think about what Gujarat farmers will do to cotton. So, I think we have to be careful on opening up this Pandora's box. As Secretary, DAC said earlier, if the State wants to really give some extra incentive, it should be crop neutral. Otherwise, we will distort the production structure. If Maharashtra wants to give higher price because they do not have irrigation, their costs are high. I do not disagree, their costs are high. They should announce Rs. 5000, Rs. 1000 per hectare to all the farmers. That is crop neutral. But I would say, give investment subsidy so that those who want can go for investment of irrigation whether it is drip or sprinkler or any other method. Water is a major problem in Maharashtra. Same thing in Karnataka is there. So the solution of that problem in, Maharashtra and Karnataka will lie in better investments in water augmenting technologies or better water management technologies, drips and others. I mean, Maharashtra is growing sugarcane on one side. Less than about 4 per cent of the cropped area is taking away two-third of the irrigation water of the State, 66 per cent water of the State for just 4 per cent land uses. Naturally, other crops do not get water and therefore their productivity remains low. If you are not charging for water, you have all that type of distortions in the system. So, my submission would be, instead of counting these things, we must keep our canvas very clear, what we are aiming at. I would love to give an extra package for

drought prone States, less irrigated States, give Rs. 5000, Rs. 10000 crore extra for irrigation or better water so that it increases their productivity. The winner at the end will be those who have better productivity rather than higher prices. Higher price is not a solution. Globally you will have to compete on most of these things. So, better productivity, better seeds, better fertilizer applications, soil, that is the way to be the winner. Any help on that they want, I would support it ten times and pick up a package specifically for that belt.

3.18 The methodology of generating the cost estimate under the Cost of Cultivation Scheme was developed by Indian Agricultural Statistics Research Institute (IASRI), which has been reviewed by various expert committees from time to time. The basic objective of the existing methodology of Cost of Cultivation Scheme is to generate cost estimates to facilitate the Commission for Agricultural Cost and Prices (CACP) to recommend Minimum Support Prices (MSP) of selected agricultural commodities. Recently, a committee under the chairmanship of Director NCAP has been constituted to examine the methodological issues in fixing Minimum Support Prices.

CHAPTER IV. PRICING OF AGRICULTURAL PRODUCE

(i) Fixation of MSP

The Government decides on the support price for various agricultural commodities taking into account the recommendations of the Commission for Agricultural Costs and Prices (CACP), the views of State Governments and Central Ministries as well as such other relevant factors which are considered important for fixation of support prices. A statement indicating the MSPs fixed since 2010-11 is at *Annexure II*.

4.2 MSP fixed by the Government acts as the floor price of an agriculture commodity. In a situation of fall in the price of a commodity below MSP, the Government intervenes and arranges purchase of the commodity through procurement agencies at the MSP rate to safeguard the interest of farmers. In normal situations when market price of a commodity is higher than MSP, the farmer is free to sell his produce in the open market which generally remains higher than MSP.

4.3 CACP recommends MSP for twenty two (22) crops and Fair & Remunerative Price (FRP) for sugarcane. Apart from Sugarcane for which FRP is declared by the Department of Food & Public Distribution, twenty two crops covered under MSP are Paddy, Jowar, Bajra, Maize, Ragi, Arhar, Moong, Urad, Groundnut-in-shell, Soyabean, Sunflower, Sesamum, Nigerseed, Cotton, Wheat, Barley, Gram, Masur (Lentil), Rapeseed/Mustardseed, Safflower, Jute and Copra. In addition, MSP for Toria and De-Husked coconut is fixed by the DAC on the basis of MSPs of Rapeseed/Mustardseed and Copra, respectively.

4.4 Agriculture is becoming unremunerative, particularly, for small and marginal farmers. On being asked whether this problem has been considered, a representative of CACP stated as follows:

"We have done, in the last three months, an analysis of, at least, ten years as to what has happened to different crops' profitability structure. If you permit me to say, there are two types of costs that we take into account. One is what we call the A2 Plus, that is, what he pays from the pocket plus the family labour. The other cost is the C2 cost. It includes the imputed return on land and on the capital. So, there are there.

If you look at what has happened to profitability structure over the last ten years, I will give you an example of cereals in the first three years of two decades, the return over paid out cost plus family labour was 56 per cent, but over C2 it was less than one per cent because C2 includes the returns of the imputed cost of land and capital. By the end of the decade, on cereals on A2, the return was 81 per cent and on C2 it is 19 percent.

That is the structure. So, the trend is towards increasing. But your point is very valid, that small holders are finding and over time the average holding size is coming down. Still there is a lot of pressure on land. So the question is how we augment the income of the farmers. My submission would be that the country has to think today of income policy because if you try to take prices too high to augment income, that may not be the most appropriate instrument to use. It is better on a per hectare basis, and this is what China has started doing. On paddy cultivation, on per hectare basis, they have started giving about 200 dollars as a support to the farmers. We have to move towards per hectare support as an income policy because the moment you do pricing, there will be lot of disturbances in demand and supply and the markets will get messed up. So the country has to think now in terms of that. But the ultimate solution to augmenting the income of the farmers is increasing productivity and also freeing up the land market. Many big farmers are not operating their lands as much but they are afraid to lease it out to others. So, I think, the land lease markets may have to be thought of in terms of freeing up so that the average holding size has to increase."

4.5 Regarding specific recommendations of the National Commission on Farmers headed by Prof. M.S. Swaminathan and the extent to which

the DAC concur with those recommendations concerning Agriculture pricing, the Secretary, DAC stated as follows:

"the National Commission on Farmers had recommended that the MSP be fixed at C2 plus 50 per cent in respect of major crops. The Government had difficulty in accepting this proposition. They felt about a uniform yardstick for fixation of MSP. This is precisely the reason that there should not be an over-fixation on cost of cultivation for fixation of MSP; but other considerations should also be kept in mind so that the right signals are given. Today, the signals need to be given, in respect of pulses and oilseeds first and foremost.

These priorities will keep shifting. It is a

dynamic sector and the priorities also need to be dynamic. Our country is so large that we cannot afford to be import dependent. If we are import dependent, we can be held at ransom by various countries. We are becoming increasingly import dependent especially on edible oils. This is an issue that we all of us need to address more determinately. Therefore, obviously the higher rates of increase that we suggest in MSP would naturally be for the oilseed sector."

4.6 The DAC has furnished the following details of the major recommendations of National Commission on Farmers and action taken by the Government thereon:

Recommendation of NCF	Action taken by Government
(1)	(2)
i) The Minimum Support Price (MSP) mechanism has to be developed, protected and implemented effectively across the country. MSP of crops needs to keep pace with the rising input costs.	The government, while fixing MSP, seeks to ensure that the farmers receive remunerative prices for their produce. MSPs take into account the cost of cultivation which includes input cost.
ii) The MSP should be at least 50% more than the weighted average cost of production.	MSP is recommended by CACP on objective criteria considering variety of relevant factors. Prescribing an increase of 50% on cost of production may distort market. A mechanical linkage between MSP and cost of production may be counter-productive.
iii) Arrangement for MSP need to be put in place for crops other than paddy and wheat.	At present 25 crops are covered under MSP regime. DAC is also implementing Market Intervention Scheme (MIS) for procurement of agricultural and horticultural commodities generally perishable in nature and not covered under MSP/PSS.
iv) MSP and procurement operations should be treated as two separate initiatives.	MSP has no relevance if it is not backed by effective procurement operations.

The Standing Committee on Agriculture in their Forty-First Report (14th Lok Sabha) in 2007-08 had recommended that in CACP should take into account the profit margin of at least 50% of the cost price.

[4.7 and 4.8 not included here]

(ii) Delay in Announcement of MSP

4.9 Regarding the timing of announcement of MSP, a former Chairman of CACP stated during a personal hearing as follows:-

"Minimum Support Price that the Government announces, in most cases, is not announced in time. The objective is to announce the MSP much before the sowing season so that the farmers get a clear signal as to how much area under which crops they should put. But if you delay the announcement of the MSP and announce it only at the time of harvest or something like that, as it happened in many years, does not serve the purpose of MSP. In my time what I did was that I tried to prepare a schedule like much before the sowing season, at least three months before the sowing season, the report will be submitted to the Government and the Government, anyway, takes sometime to circulate to the State Governments and also amongst the concerned Ministries so they will have one month time to consider and then the Cabinet takes a decision in another one month. But sometimes, it used to be lying with the Ministries for months and there was a time I remember, in 2008, when this was not announced for six months and only just a few days before the harvest, this was announced. Unfortunately, this kind of treatment to the Minimum Support Price does not really help the farmers and the farming economy as such."

4.10 When desired to know the opinion of another expert regarding the need for announcement of MSP much before the cropping season starts so that farmers also are able to know what price they will get, the witness stated before the Committee as follows:

"Definitely. On this, there are norms. Unfortunately, in certain years, these norms are not adhered to. But the norms are very clear that the MSP announced should be before the sowing season so that for most kharif crops, MSP should be announced latest by June and for most rabi crops, it should be announced latest by November and in both cases on the 1st November and 1st of June. I think things are better on the announcement in recent years than when there was a period in the middle where sometimes the announcement was not even made till the harvest was about to arrive which makes MSP quite useless. So, you are right in this but I think that is the philosophy of MSP and if that does not happen in a particular year, that has to do with factors certainly not that of the CACP but is the Cabinet decision which comes late on these matters. CACP reports are well in before those dates."

4.11 The Committee when desired to know the number of occasions the MSP was announced in time during the last five years and the reasons for delay for the announcements of MSP. The DAC in their written reply stated as follows:

"The sowing season of various crops varies in a vast country like India. The sowing season for Kharif crops is generally between May-August and for Rabi between October-December. The date of submission of report of CACP and date of Announcement of MSP is given below:

Year	Kharif		Rabi	
	Date of Submission of Report	Date of Announcement of MSP	Date of Submission of Report	Date of Announcement of MSP
(1)	(2)	(3)	(4)	(5)
2009-10	29.05.2009	20.08.2009	10.08.2009	05.11.2009
2010-11	12.04.2010	10.06.2010	26.07.2010	20.10.2010
2011-12	31.03.2011	09.06.2011	29.07.2011	25.10.2011
2012-13	04.04.2012	25.06.2012	09.08.2012	15.11.2012
2013-14	25.03.2013	10.07.2013	22.07.2013	23.10.2013

[4.12 and 4.13 not included here]

4.14 When the Committee desired to know whether any consultation takes place between the CACP and the Ministry of Textiles in case of MSP for Jute and Cotton, a representative of the Ministry of Textiles stated as follows:

"The CACP formally conducts consultation processes with the office of Textile Commissioner with regard to cotton and also inputs are sought from State Governments. When we submit our memorandum to the CACP, we take into account the cost of product and also the demand and supply situation because we formulate the cotton balance sheet which indicates the production, consumption and the closing stock that is there and also the exportable surplus. We see the trends in market prices about domestic as well as the international market prices, then parity between prices paid and parity received by the farmers, inter-crop price parity also, and also the effect on generational price level.

In the cotton season 2011-12, we have witnessed major riots in Aurangabad and in Akola of Vidarbha regions which had major drought in that period. We also had a period wherein the cotton production was at the highest level 353 lakh bales in India and however, the prices which moderated did not touch MSP levels. For the year 2012-13, there has been increase in the MSP prices on cotton. The State Government had asked for 4,300 rupees per

quintal. The CACPs recommendations were 3,900 rupees a quintal. The Ministry of Textiles had recommended at that point of time 4,000 rupees a quintal".

4.15 The Committee when queried whether there has been any instances of difference of opinion between the Ministry of Textiles and the CACP on the issue of fixation of price of Cotton, a representative of Ministry of Textile stated about MSP of 2011-12 as follows:

"a formal reference was made by the Textile Minister to the Agriculture Minister that the MSP price of cotton for the 2011-12 was not adequately remunerative and there was a need to enhance the MSP price for the 2013 cotton season. So, that recommendation did have a specific number for the MSP price and we broadly feel that the recommendations of the Ministry of Textiles have been accepted."

4.16 When asked about the experience of the Ministry of Textiles in the case of Jute, the representative stated as follows:

"For the current year, the Minimum Support Price is Rs. 2200. Before that, it was Rs. 1675 and before that, it was Rs. 1575. There was an increase from Rs. 1575 to Rs. 1675. At that time, our Jute Commissioner and field offices were of the view that the cost of production is more like Rs. 1800. That is the time when the Ministry felt that it should not be so. Then, it

was subsequently increased from Rs. 1675 to Rs. 2200. This has happened about two years ago".

4.17 The Central Government fixes Fair and Remunerative Price (FRP) of sugarcane having regard to the factors mentioned in Clause 3(1) of the Sugarcane (Control) Order 1966 viz., cost of production of sugarcane; return to the growers from alternative crops and the general trend of prices of agricultural commodities; availability of sugar to consumers at a fair price; price at which sugar produced from sugarcane is sold by sugar producers; recovery of sugar from sugarcane; realization made from sale of by-products, viz., molasses, bagasse and press-mud or their imputed values; and reasonable margins for the growers of sugarcane on account of risk and profits. The FRP so fixed is based on recommendations of the Commission for Agricultural Costs and Prices (CACP) and after consultations with State Governments and other stakeholders.

[4.18 not included here]

4.19 While furnishing the details of recommendations of Rangarajan Committee for resolving the issue of difference in pricing of sugarcane as fixed by CACP vis a vis state government of Uttar Pradesh, the DAC stated as follows:-

"the Committee has been of the view that there is a need to rationalize the pricing of sugarcane. There should be a sharing of the revenues/value created in the sugarcane value chain between the farmers and the millers in a fair and equitable manner. Based on an analysis of the data available for the by-products (molasses and bagasse / cogeneration), the revenue-sharing ratio has been estimated to amount to roughly 75 per cent of the ex-mill sugar price alone. This ratio corresponds to a recovery ratio of 10.31 per cent at the all India level. For a particular mill, the ratio will vary in the proportion of the mill's recovery ratio

to the above all India recovery ratio. The actual payment would happen in two steps. The first would be payment of a floor price based on FRP as per extant mechanism. Balance payment of cane dues will be done subsequent to publication of monthly ex-mill prices, on the lines indicated. Such a system would obviate the need for State Advised Price."

4.20 Supplementing him, a representative of Department of Consumer Affairs and Food stated as follows:

"As far as sugarcane is concerned, the CACP fixes the fair remunerative price the FRP which is the benchmark price below which no sugar mill can purchase sugarcane from the farmers. But the States are generally fixing a very high price, much above the FRP. Most of the States are having their own Acts. For example, UP. They have got a separate Act for enforcing the SAP fixed by the State Government. As per the Act, the farmers are supposed to be paid within 14 days from the date of purchase. Otherwise, the mills have to pay interest on that money. However, the Government can take some action against the mills. That is being enforced in UP.

Now informal Group of Ministers has been constituted to look into various problems of the sugar industry; and the Government has extended a loan worth about Rs. 6,600 crore, which is interest free. The interest will be met from the Sugar Development Fund. The payment period is about five years with a moratorium of two years. xxxx xxxx xxx It is for the purpose of loan. It is basically for making cane payment and cane price arrears payment. That will be monitored. We have issued the guidelines. The Cane Commissioner and the Principal Secretary, have to monitor it."

[4.21 not included here]

arrears for 2013-14, 2012-13 sugar seasons and earlier period as on 15.12.2013 is as

4.22 A statement indicating cane price under:-

(Rs. in crore)					
Sl. No.	State	Cane Price Arrears 2013-14	Cane Price Arrears 2012-13	Arrears For 2011-12 & Earlier	Total Cane Price Arrears
	(1)	(2)	(3)	(4)	(5)(2+3+4)
1	Punjab	113.88	0.00	0.00	113.88
2	Haryana	108.64	0.00	0.00	108.64
3	Rajasthan	0.00	5.65	0.00	5.65
4	Uttar Pradesh	0.00	2177.28	110.24	2287.52
5	Uttarakhand	183.66	78.53	24.92	287.11
6	Madhya Pradesh	0.00	0.00	13.39	13.39
7	Gujarat	273.36	0.17	13.41	286.94
8	Maharashtra	422.05	0.00	49.32	471.37
9	Bihar	0.00	34.62	33.04	67.66
10	Andhra Pradesh	216.58	24.97	0.00	241.55
11	Karnataka	1482.66	17.32	32.86	1532.84
12	Tamil Nadu	103.07	84.35	17.03	204.45
13	Odisha	0.00	26.72	2.02	28.74
14	West Bengal	0.00	0.05	0.00	0.05
15	Puducherry	0.00	2.50	0.07	2.57
16	Goa	0.00	3.75	0.00	3.75
	Total	2903.90	2455.91	296.30	5656.11

4.23 In a post evidence clarification regarding FRP for sugarcane and state advised prices announced by the state government of Uttar Pradesh, the DAC has furnished as follows:-

The position regarding the Fair and Remunerative Price (FRP) of sugarcane, as determined by the Central Government during the last five years, is given in the following table:-

(Rs. per Quintal)			
Sugar Season	FRP accepted by the Government	Basic recovery rate	Premium over basic recovery rate (in Rs. for increase of every 0.1%)
(1)	(2)	(3)	(4)
2009-10	129.84	9.5	1.37
2010-11	139.12	9.5	1.46
2011-12	145.00	9.5	1.53
2012-13	170.00	9.5	1.79
2013-14	210.00	9.5	2.21

(iii) Need for counter-veiling duty

4.24 Cultivators of palm oil are facing difficulties as they are not able to get inputs like labour,

fertilizer etc. The government has been giving subsidy for imported palm oil. In this situation, the Committee wondered whether Palm oil growers would continue this crop and if the cultivators switch to other crops, it would take time to get back to cultivation of Palm Oil plants. When asked about the corrective steps taken by the Government in this regard, the Secretary, DAC stated as follows:

"I think, this has long-term implications for the entire edible oil security of the country. Palm oil is the cheapest edible oil in the world and we have, over the years, increasing dependence on imports. Now, about 50 per cent of our total consumption of edible oils comes from imports. This is despite the fact that domestic oilseed production and productivity both have been increasing, but our consumption levels, because of our improving economy, have increased at a much higher pace.

The maximum production of palm oil in the

world comes from Indonesia and Malaysia. If you recall, in 2008-09 also, there was a spurt in the prices of palm oil and in order to check food inflation, the Government had taken a decision to allow imports at zero level of duty for crude palm oil and 7.5 per cent duty for refined palm oil. Indonesia and Malaysia have their own system to promote export of refined palm oil vis-à-vis export of crude palm oil. They have an export duty. So, they levy more export duty on crude palm oil and less export duty on refined palm oil. Actually, the benefit of reduction of import duty in India is derived by the Governments of Malaysia and Indonesia by increasing their duties. They have a flexible duty structure in which as per the price band of these oils in the world market, their duty structure also keeps fluctuating.

If we want to promote the domestic production of palm oil, we have to do certain things. We have to promote palm oil because it is increasingly coming into the consumption basket not only for commercial products, but also especially in East India because it is very inexpensive oil. So, we have to produce it locally. If the landed cost of import palm oil is such that the domestic palm oil production becomes viable, it would be better. The prices received by the farmers have dropped by 30 per cent over the past two years because Indonesia and Malaysia are unloading their stocks at very low levels and the global prices have fallen. We have requested the Government to put in a counter-cyclical duty structure so that the landed cost of palm oil is at least Rs. 6,500 per quintal because the price formula on which the palm oil growers are paid is dependent, to a very large extent, on the imported price of palm oil. So, if the import price of palm oil is fixed at a level which cannot go below Rs. 6,500, then the domestic cultivation of palm oil in India becomes viable. We have moved a proposal, but, as you know,

sometimes the interests of the consumer overtake the interests of the farmer. So, we have not yet been successful. All that we have been able to manage to do is that the duty level of zero was increased to 2.5 per cent in February, but the duty level of refined oil remains at 7.5 per cent. As a result, even the processing facilities in India are now under-utilised because the importers find profit in importing refined produce from abroad. So, we would request the protection of this Committee in supporting our case with the Department of Revenue so that we can have a viable duty structure in place.

The same issue is there in regard to pulses also. We still import about three million tonnes of pulses from across the world. The imported price, especially of urad and tur, is lower than the MSP. If that is so, that depresses the market price and the farmer does not get a good value for his produce. We have been requesting the Department of Revenue. The concept of minimum import price is now counter to WTO and we are not able to do that, but we can still impose a counter-cyclical duty so that the entry price of import is kept above the MSP level. If that happens, that will give a good signal and good incentive to the domestic producers to increase production both of palm oil as well as pulses."

CHAPTER V Other Issues

(i) Procurement

Implementation of MSP through procurement is undertaken by Central and State level agencies. Food Corporation of India (FCI), under the charge of Ministry of Consumer Affairs, Food and Public Distribution, is the nodal agency for procurement of foodgrains. Decentralized procurement was introduced by the Government in 1997-98 with a view to encourage local procurement to the

maximum extent thereby extending the benefits of MSP to local farmers, to enhance efficiency of procurement and PDS, to provide foodgrains more suited to the local taste under the PDS and also to effect savings in transportation and handling costs of the FCI. Under the decentralized procurement scheme, the State Government itself undertakes direct purchase of paddy and wheat and procurement of levy rice on behalf of Government of India. National Agricultural Cooperative Marketing Federation (NAFED) hitherto was the only nodal agency for procurement of pulses and oilseeds but their procurement has now been entrusted to Central Warehousing Corporation (CWC) and National Cooperative Consumers' Federation (NCCF) and Small Farmers Agri-Business Consortium (SFAC) also. Cotton Corporation of India (CCI), Ministry of Textiles, alongwith NAFED, is the nodal agency for procurement of Cotton. Jute Corporation of India, Ministry of Textiles, is the nodal agency for procurement of Jute.

[5.2 not included here].

5.3 When desired to know the details of infrastructural inadequacies and possibilities of engagement of private agencies to fulfill such inadequacies, the Department of Agriculture and Cooperation in their Written Reply stated as follows:

"Department of Food and Public Distribution deals with the procurement of rice, wheat and coarse grains. The inadequacies faced in procurement are lack of proper marketing infrastructure, storage capacity, milling capacity and qualified technical staffs.

The States are asked to improve marketing infrastructure, taken advantage of various schemes to improve the storage, take advantage of the schemes of Department of Food

Processing to improve milling capacity and appoint qualified technical staff. As for FCI, the following steps have been taken:-

- (i) To augment the storage capacity in various States, Private Entrepreneur Guarantee (PEG) scheme has been formulated by Government of India for construction of covered storage godowns through private entrepreneurs, CWC and State Warehousing Corporation (SWC). Under the scheme, FCI gives guarantee for the storage charges to the private investors for ten years. The total capacity planned to be created under the scheme is 203.75 lakh MT.
- (ii) Food Corporation of India (FCI) is undertaking a process of recruitment of qualified technical staff for filling up the vacancies.
- (iii) National Agricultural Cooperative Marketing Federation of India (NAFED) Undertakes the procurement of Pulses, Cotton and Oil seeds. Cotton Corporation of India and Jute Corporation of India undertake the procurement of Cotton and Jute respectively. The NAFED has to engage the services of Cooperative federations in the State Govt. for procurement even though they do not have requisite infrastructure for the same which has to be put in place temporarily as per requirement from time to time.

[5.4 not included here]

5.5 In a Post Evidence query, the DAC furnished the information in regard to annual production and procurement by Central and State government agencies for all 24 agricultural produce for which MSP are fixed (Annexure IX).

5.6 When the Committee desired to know how distress sale can be stopped, the Chairman, CACP stated as follows:

"your point is hitting really the crux of the problem. There is no doubt about it and that is the biggest concern that we also have. But the solution of that does not lie as much with CACP or even with the Centre. Lately, two States Chhattisgarh and Madhya Pradesh have set up a system in the last 3-4 years where, in fact, they are going somewhat overboard in procuring everything with the Government giving huge bonus and all that. But the structure is set. It is computerised, farmers are coming, farmers are being sent SMS as to on what day they can bring in their produce etc. So, there is a lot of institutional and infrastructure issues where the State has to take the initiative to make sure that the farmers, whoever wants to sell, can get at least the MSP. This is the first point.

Secondly, the futuristic models of ensuring that there is no distress sale, it is not really the FCI or this type of procurement. What we need to develop is a system which has already been initiated and that is the warehouse receipt system and through warehouse receipt system, he can bring it there and get 70 per cent or 80 per cent as advance against that and he can sell it after 3-4 months if the prices are better.

So, those are the marketing systems that we need to put in place and the Ministry has already initiated those things. They need to be scaled up. These are the ways in which we can help the small holders of land and those who have the capacity to hold back the grain.

xxxx xxxx xxxx They are setting up things. It is going somewhat slow. Hopefully it will improve. Maybe, the Centre can help in that process jointly getting the infrastructure in place".

5.7 Decentralized procurement was introduced by the Government in 1997-98 to encourage local procurement to the maximum extent thereby extending the benefits of MSP to local farmers, to enhance procurement and PDS, to provide foodgrains more suited to the local taste under the PDS and also to effect savings in transportation and handling costs of the FCI. When desired to know the extent to which objectives of Decentralized procurement have been achieved, agricultural produces procured and farmers have been benefited by the Scheme, the DAC in their written reply furnished the following:

"The Government of India tried to persuade State Governments to adopt the decentralized system of procurement (DCP) scheme. 13 States have so far adopted DCP scheme namely- Madhya Pradesh, Uttarakhand, Gujarat, Chhattisgarh, West Bengal, Odisha, Tamil Nadu, Kerala, Karnataka, Andaman & Nicobar Islands, Andhra Pradesh, Bihar and Rajasthan (Alwar District only). The efforts are on. Once a State Government agrees to adopt DCP system, the assistance is provided to State Government for augmenting their infrastructure, training of manpower and logistic support by the Government of India.

When FCI procures wheat, rice and coarse grains through State Government/Agencies, they in turn involve Farmers' Cooperatives and Self Help Groups etc. in the process of procurement. Over the years the procurement of foodgrains in DCP States has increased considerably.

Procurement centres are opened in the neighbourhood of the farmers by the State Governments/Agencies keeping in view the availability of foodgrains for procurement and other factors. The payment is made to the farmers through account pay cheques and ECS, as such removing the middle-men".

[5.8 not included here]

5.9 During evidence when Committee asked in the context of procurement of Jute by Jute Corporation of India, the reasons for reduction in the number of procurement centres almost by 50 per cent and reduction in staff strength. The Secretary, Ministry of Textiles while clarifying the position submitted as follows:

"The business plan proposal has been approved by the JCI Board and it is under consideration of Ministry of Textiles including the shortage of manpower. Increasing the age of retirement from 58 to 60 years has also been recommended by the Board of Directors for consideration and these steps could alleviate the situation."

(ii) Market Intervention Scheme

5.10 Government implements Market Intervention Scheme (MIS) on the request of State/UT Government for procurement of agricultural and horticultural commodities not covered under the Minimum Support Price. The MIS is implemented in order to protect the growers of these commodities from making distress sale in the event of bumper crop when the prices tend to fall below the economic level/cost of production. Losses, if any, incurred by the procuring agencies are shared by the Central Government and the concerned State Government on 50:50 basis (75:25 in case of North-Eastern States). However, the amount of loss to be shared between Central Government and the concerned State Government is restricted to 25% of the procurement cost. Profit, if any, earned by the procuring agencies is retained by them.

5.11 During the personal hearing of representatives of Alliance for Sustainable and Holistic Agriculture, a representative stated as follows:

"The way the market intervention scheme has been designed, it has been created for only those commodities which are not procured; for onions, certain vegetables and so on whereas the market intervention scheme scope should be expanded and should be made more effective with enough financing in a manner that whenever market prices are going below the MSP, the Government as a player should be able to step in and procure enough quantities that traders are forced to match at least the price that the Government is paying. So, there is much scope for improving the market intervention scheme."

5.12 The Committee when desired to know the extent to which the scheme has been able to achieve its objectives in various states, details of Central share provided to various states during each of the last three years for procurement under the scheme and the details of criteria for fixation of minimum prices at which crops are procured under the Scheme, the DAC in their written reply stated as follows:

"The Market Intervention Scheme is implemented on the request of a State/UT Government ready to bear 50% loss (25% in case of North-Eastern States), if any, incurred on its implementation. The MIS is implemented when there is at least 10% increase in production or 10% decrease in the ruling rates over the previous normal year. The loss is shared on 50:50 basis between the Central Government and the State Government (75:25 between Central Government and North-Eastern States). However, the loss is restricted to 25% of the total procurement value which includes Market Intervention Price (MIP) paid to the farmers plus permitted overhead

expenses. Profit earned, if any, in implementing the MIS is retained by the procuring agencies.

The various aspects of MIS like the proposed quantity for procurement, MIP, period of operation etc. are discussed and finalized in a meeting convened in consultation with State Government and other concerned Departments/Divisions. Under the scheme, a pre-determined quantity at a fixed MIP is procured by NAFED as Central agency and the agencies designated by the State Government for a fixed period or till the prices are stabilized above the MIP whichever is earlier. The area of operation is restricted to the concerned State only.

As stated above, the MIS is implemented on the specific request of State/UT Government willing to share the loss with Central Government on 50:50 basis (25:75 in case of N-E States). However, during the last three years, MIS has been implemented in various States namely U.P., West Bengal, Andhra Pradesh, Himachal Pradesh, Karnataka, Rajasthan, Tamil Nadu, Mizoram, and Nagaland for procurement of various horticultural produce like potato, oil palm, arecanut, onion, turmeric, garlic, chilli, iskut, pineapple etc. This clearly shows that the MIS has achieved its mandate.

It is experienced that the moment MIS is sanctioned for a specific commodity in a specific State, the market sentiments goes up which helps the farmers to fetch better realization for their produce. As such, in most of the cases the necessity for implementation/procurement of the sanctioned commodity has not arisen. However,

during the last three years, the Department has released central share loss under MIS as per following details:-

State	Commodity	Amount Released (Rs. in crores)	Release in the Year
(1)	(2)	(3)	(4)
Himachal Pradesh	Apple	1.90	2010
Andhra Pradesh	Oil palm	1.66	2011
Nagaland	Ginger	1.76	2013
Nagaland	Orange	1.90	2013
Rajasthan	Garlic	1.39	2013
Mizoram	Chilli	1.15	2013

The various aspects of cost of production of a specific commodity to be considered in the MIS in a specific State are discussed and finalized in a meeting convened under the chairmanship of Joint Secretary, (Cooperation), Department of Agriculture & Cooperation. The other members of the MIS committee are representatives of the concerned State Government, Central Agency, State Agency, Department of Expenditure, Horticultural Division, Internal Finance Dn., Economics & Statistics Dn. etc. of DAC. Under the MIS, a pre-determined quantity at a fixed MIP for a fixed period is allowed."

5.13 In the case of potato, onion and other vegetables the MIS does not help the farmers to get the price. Explaining the difficulties for extending MSP to certain commodities of horticulture produce, the Secretary Department of Agriculture Cooperation stated as follows:

"MSP regime typically is meant for non-perishable crops, those crops which can be stored by whoever procures it and then dispose it of later when the price is stabilised so that there is no pressure. Horticulture produce, by its very nature, is all perishable. They are not amenable to long term storages, except onions and potatoes which can still be stored for a slightly longer period. After a week, even they

lose their quality; especially in case of potatoes, if the storage is not very good, it starts sprouting and it cannot be used for human consumption. Therefore, whoever procures it, they will have to dispose of it within a very short while. Sometimes, in case of most perishable commodities, they will have to dispose of it within that week. It is not going to make a difference on the prevailing price mechanism unless the market which they chose is somewhere else. So, generally what happens is that MIS is a very difficult operation to implement. The scheme is that the State will have to agree to bear 50 per cent of the cost. The States are generally reluctant to do that.

Secondly, the machinery for procurement does not exist because these are sporadic cases. With perishables, this happens more often than not. Take the case of onions. Onion prices were extremely high last year, and this year there are going to be floods. There are already huge problems in onions because naturally farmers want to go for crops which will fetch them better returns. But all of them simultaneously grow it and that results in crash in prices. While we do have a Market Intervention Scheme, it is only to provide relief to farmers in the sense that they get a minimum kind of price for their produce. It does not really help increase the prevailing market price for any appreciable time. The idea is that if we just intervene during the time of peak arrivals, that should lift the market and help getting better prices."

(iii) Impact of MGNREGA

5.14 Several State Governments, farmers, experts and stakeholders have informed the Committee that the implementation of MGNREGA has impacted the availability of labour for critical agricultural operations like sowing and harvesting. Further, as per the findings of a Study conducted by the Agro Economic Research Centres of Department of Agriculture

and Cooperation and the Institute of Social and Economic Change, Bengaluru on MGNREGA, the implementation of MGNREGA has created competition for demand of labour and consequently, shortage of labour for agricultural operations particularly during peak seasons like sowing and harvesting. Increase in cost of cultivation /production due to increase in wages of agricultural labourers was also brought out in the Study.

5.15 The MGNREGA guidelines have been amended in 2012 with a view to correct the above situation. As per the amendment to schedule 1 of MGNREGA guidelines issued in May 2012, a large number of activities/works having significant impact on agriculture and farm sector relating to provision of irrigation facility, dug out farm pond, horticulture, plantation, farm bunding and land development; agriculture related works such as vermin-composting, liquid bio-manures etc are included as eligible activities under MGNREGA. The works permissible on individual lands or homesteads are expected to help small/marginal farmers to solve the issue of shortage of agricultural labourers.

5.16 The DAC in their Post Evidence reply informed the Committee that the primary objective of Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) is to enhance the livelihood security of the rural households by providing up to 100 days of guaranteed wage employment in a year to every household on demand for doing unskilled manual work. The objective of MGNREGA is to supplement the income of a rural household and it is not intended to be the sole means of earning livelihood for the rural population. The workers are free to avail any other employment opportunities available to them.

5.17 As per operational guidelines of MGNREGA, normal agriculture operations such as land preparation, ploughing, sowing, weed

removal, turning the soil, watering, harvesting, pruning and such similar operations are not permissible.

5.18 However, as per the Amendment to Schedule I of Mahatma Gandhi National Rural Employment Guarantee Act, 2005, issued vide notification dated 4th May, 2012, the following activities on the lands of small or marginal farmers as defined in the Agriculture Debt Waiver and Debt Relief Scheme, 2008 have been included in the list of activities for focus in schemes formulated by States under section 4 of the Act:-

- (i) provision of irrigation facility, dug out farm pond, horticulture, plantation, farm bunding and land development;
- (ii) agriculture related works, such as, NADEP composting, vermin-composting, liquid bio-manures;
- (iii) livestock related works, such as, poultry shelter, goat shelter, construction of pucca floor, urine tank and fodder trough for cattle, azolla as cattle-feed supplement;
- (iv) works in coastal areas, such as, fish drying yards, belt vegetation;
- (v) rural drinking water related works, such as, soak pits, recharge pits;
- (vi) rural sanitation related works, such as, individual household latrines, school toilet units, anganwadi toilets, solid and liquid waste management.

5.19 A large number of activities/works having significant impact on agriculture and farm sector relating to provision of irrigation facility, dug out farm pond, horticulture, plantation, farm bunding and land development; agriculture related works, such as, NADEP composting, vermin-composting, liquid bio-manures are included in para 1B of Schedule I of the MGNREGA and the works permissible on individual lands or home-steads. These activities are expected to help small/marginal farmers in dealing with this issue.

5.20 In addition, as per amendment vide notification dated 3rd January, 2014 to Schedule I Para 4 (III) Category C (i), works for promoting agricultural productivity by creating durable infrastructure required for bio-fertilizers and post-harvest facilities including pucca storage facilities for agricultural produce has been permitted under Mahatma Gandhi NREGA.

EVALUATION STUDY ON EFFICACY OF MINIMUM SUPPORT PRICES (MSP) ON FARMERS

(DMEO Report No.231) http://pmindia.nic.in/nowindia/images/img_symb1.gif NITI Aayog
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EXECUTIVE SUMMARY

Based on the recommendations of the Commission for Agricultural Costs and Prices (CACP), the Department of Agriculture and Co-operation, Government of India, declares Minimum Support Price (MSP) for 22 crops before the sowing season. The idea behind MSP is to give guaranteed prices and assured market to the farmers and save them from the price fluctuations. It insulates farmers from the unwarranted fluctuation in prices caused by the variation in supply (largely influenced by the monsoon), lack of market integration, information asymmetry and other elements of market imperfection plaguing the agricultural markets. The guaranteed price and assured market are expected to encourage higher investment and in adoption of modern technologies in agricultural activities. Further, with globalization resulting in freer trade in agricultural commodities, it is very important to protect farmers from the unwarranted fluctuation in prices, provoked by the international level price variations.

Given the relevance of MSP scheme, the erstwhile Programme Evaluation Organization (PEO), now the Development Monitoring and Evaluation Office (DMEO), on a request from the Ministry of Agriculture, Government of India has conducted an Evaluation Study on the Efficacy of MSP. The study has been designed to explore the relevance of MSP and to ascertain if the intended benefits have reached the farmers after such a long period of implementation. The constraints faced in the implementation have also been analyzed and probable solutions have been explored and recommended.

E.1 Evaluation Objectives

- a. To explore and analyze the effectiveness

of price policy in India in the context of nationwide price support objectives set forth by government.

- b. Impact of MSP on creating a predictable and equitable crop price regime.
- c. To identify regional and inter crop variations in the implementation of MSP and reasons for the same.
- d. To study and evaluate the impact of MSP on cropping patterns
- e. To evaluate impact of MSP on long term agricultural competitiveness.
- f. To evaluate impact of MSP on optimal land and water use and sustainability on a nationwide basis across crops.
- g. To evaluate whether adoption of improved technology, appropriate investment and rural infrastructure has been aided by operation of MSP.
- h. To suggest policy measures related to MSP for the future.

E.2 Evaluation Methodology

A multi-stage, stratified random sampling method with a total of 14 states, 36 districts, 72 blocks, 144 villages and 1440 Households were selected for the study. The study reference period was from the year 2007 to 2010.

E.3 Reference Period

The reference period for the study is from the year 2007-08 to 2010-11. It was discussed and agreed in the Contract Evaluation and Monitoring Committee meeting that the primary data at the farmer level will be collected for the past 3 years only as farmers may not have reliable memory to recall before that period.

E.4 Major Findings

E.4.1 State Specific Findings

1. In Andhra Pradesh, farmers were aware of MSP rate and most of them sold their crops at MSP. There was discontentment among the farmers regarding MSP not covering costs; however, they were in support of continuance of MSP to avoid exploitative practices. The wholesale prices of paddy were observed to be below MSP but the expected prices of farmers were not met through MSP. The payment was delayed at times more than a month when the farmers were in immediate need of cash.
2. In Assam there was no Paddy Procurement Centre (PPC) in one out of the two selected districts. Even 2-3 PPCs in a district is quite inadequate. Non availability of rice mills in many areas and apathy shown by the available mills to make agreement with PPC were the main reasons for few PPCs. The charges provided for milling to the millers is not economic from the millers' point of view.
3. In Bihar the farmers knew about MSP but the awareness about the time of their announcement was very low. In the reference period, none of the interviewed farmers sold paddy or wheat at MSP; and the sugarcane was sold at Fair and Remunerative Price (FRP) in the district of West Champaran. The reason for not selling at MSP was that the purchase centers were located at distance which required high transportation costs. In addition to this, there was no transparency in the system. The involvement of middlemen was very high at the Block Purchase Centers. Nevertheless, the farmers were optimistic about selling their produce at MSP and some had already sold because of the presence of purchase centres in the villages itself.
4. In Gujarat 33 percent of farmers were aware of MSP and the time of their declaration. Most of the respondents agreed that MSP should continue and the reason cited for this was that MSP determines the market prices so farmers indirectly benefit from it. It also provides psychological support as it insulates farmers from the possibility of low prices. However, the wholesale prices in the state were higher than MSP. Accordingly, the expectations of farmers were also to get a price higher than MSP.
5. In Karnataka more than 80 percent of farmers in three out of the four villages in the district Bellary and at least 80 per cent of the reported households in the district Mandya were aware of MSP. However, the noticeable fact was that none of the farmers in Bellary knew about MSP before the sowing season. Only in one village in Mandya district, only ten percent of the households knew about the declaration of MSP before the sowing season and rest of them came to know about it only after the sowing season. Majority of the households, government representatives and knowledgeable persons were in favour of continuance of MSP. The reason cited was that MSP prevented the wholesale prices from falling, and it also ensures guaranteed income to the farmers by acting as a floor price.
6. In Madhya Pradesh, the MSP has not been able to show much influence as many of the farmers were not even aware of MSP. It did not help in adoption of the technology as the declaration comes well after the sowing of crop.
7. In Maharashtra, 75% households were aware of MSP in Yavatmal district. In Kolhapur district, less than 30% households were aware of MSP while in Latur district, it was 33%. In Yavatmal 17 per cent, in Kolhapur 73 per cent and in Latur

- 44 per cent knew about MSP before the sowing season and rest knew about MSP only after the sowing season. About 56 per cent of the selected farm households opined that the MSP should continue as a guaranteed price is ensured to the farmers.
8. In Rajasthan only 56 per cent of the households were aware of MSP. Out of them 22 per cent knew about MSP before the sowing season and 38 per cent after the sowing season. MSP was below the wholesale prices for all the crops except Bajra and maize in 2008-09. The expected prices were much higher than the MSP.
 9. In Tamil Nadu, the MSP for paddy was remunerative since the rate of increase in MSP (32%) during the reference period was greater than the rate of increase in the cost of cultivation. As regards the black gram, green gram and groundnut, their MSPs were lower than the cost estimates indicated in CACP report.
 10. In Uttar Pradesh, all the farmers were aware of MSP but none of them knew it before the sowing season, though according to the government functionaries the declaration was done before the sowing season. All the functionaries surveyed involved in the implementation of MSP and the knowledgeable persons were in favour of continuation of MSP which indicates that in spite of all the lacunae in the process of implementation of MSP, people on the whole have benefitted from it. The wholesale market price for wheat has been higher than the MSP during the reference period, while in the case of paddy, it has been lower in Uttar Pradesh.
 11. In Uttarakhand all the farmers interviewed were aware of MSP but they knew about it only after the sowing season. The respondents at various levels opined that the MSP should continue as it provides assured market to their produce, it determined the floor price and also ensured a guaranteed returns for the produces.
 12. In West Bengal, MSP system has a long way to go. None of the farmers sold their produce at MSP. Intermediaries are quite common owing to the non-existence of mandis/market places for paddy. Rice millers have are not in direct contact with the farmers (except the camps organized recently by the mills on the instructions from the government). It is very difficult for mills to make small purchases from the farmers while it is convenient to deal with the middlemen for the bulk purchase.

E.4.2 Findings Based on Case Study

It was felt that the information provided by the farmers for the year 2010-11 was expected to be more reliable to derive study findings, than the information received / collected for the previous years, i.e., 2007-08 to 2009-10 since they may not correctly recollect the information for the past years. Therefore, in order to get more accurate findings, by excluding the mismatch data gap, and thereby reducing the non-sampling errors, an attempt was made to analyze the latest one year data (2010-11) of the sampled farm households on few parameters. The findings emerged from the case study of crops in different selected States are as under:

1. 65% of the small farmers earned 60% of their annual income from agriculture. In the case of farmers, 19% of them generated 68% of their annual income from agriculture. Finally, 16% of the large farmers received 74% of their annual income from cultivation.
2. 81% of the cultivators were aware of MSP fixed by the Government for different crops and out of them only 10% knew about MSP before the sowing season. 62% of the farmers came to know about MSP after the sowing season. 28% of the

farmers, although knew about MSP, they could not recollect whether MSP was declared before or after the sowing season.

3. 18% of the farmers came to know about MSP for their produces out of their own efforts and only 7% knew about it through the State officials from the District level to the Gram Panchayat level. 11% of the farmers were made aware of MSP by the FCI officials. Finally, 34% of the cultivators received information on MSP from the knowledgeable persons such as Village Headman, Sarpanches, Village School Teachers and Gram Sevaks.
4. 32.13% of the farmers received their payment of MSP in cash. 40.29% of the cultivators of the selected States received their payments under MSP by Cheques, and 27.4% of the farmers got their dues on MSP in the shape of Bank deposits.
5. 20% of the farmers of the sample States received MSP of their product same day and 7% received within 2 to 3 days after selling. 51% of the farmers received their payments of MSP after one week and 5% received after one month.
6. 67% of the farmers sold their produce at MSP rate through their own arrangement and 21% through brokers. 8% of the farmers sold their products through private agencies and 4% sold through the Government agencies.
7. 78% of the farmers adopted improved methods of farming such as: high yielding varieties of seeds, organic manure, chemical fertilizer, pesticides and improved methods of harvesting etc. for increasing the production due to the remunerative price, i.e., MSP declared by the Government.
8. 21% of the farmers of the sample States expressed their satisfaction about MSP declared by the Government whereas 79% expressed their dissatisfaction due to various reasons. Although, majority of the

farmers of the sample States were dissatisfied on MSP rates, still 94% of them desired that the MSP rates should be continued.

E.5 Study Recommendations

1. First and foremost, the awareness among the farmers needs to be increased and the information should be timely disseminated till the lowest level so that the knowledge would increase the bargaining power of the farmers.
2. Delays in MSP payments have negative effects on the farmers which needs to be corrected and timely payment should be ensured.
3. As intended by the policy makers, MSP should be announced well in advance of the sowing season so as to enable the farmers to plan their cropping.
4. Improved facilities at procurement centres, such as drying yards, weighing bridges, toilets, etc. should be provided to the farmers. More godowns should be set up and maintained properly for better storage and reduction of wastage.
5. There should be meaningful consultations with the State Government, both on the methodology of computation of MSP as well as on the implementation mechanism. The criteria for fixing MSP should be current year's data and based on more meaningful criteria rather than the historical costs.
6. The small and marginal farmers can be provided with some exemption in Fair Average Quality (FAQ) norms to provide them with a source of income. The Procurement Centers should be in the village itself to avoid transportation costs.
7. The MSP scheme requires a complete overhaul in those States where the impact of the scheme ranges from 'nil' to 'at-best marginal' to ensure that MSP as an important instrument of the Government's

agricultural price policy is not undermined. In fact, in a few selected States in Eastern India (for instance, Assam and West Bengal), the poor impact of the scheme may be judged by the fact that none of the selected farmers were even aware of the existence of such a Scheme.

CHAPTER -III IMPLEMENTATION PROCESS

The states have devised their own mechanisms for the procurements of food grains and other agriculture produces under the MSP operations. The mechanisms designed to suit the local environment and processes in the selected states have been explained in alphabetical order, state wise.

3.1 Organizational Mechanism in States

3.1.1 Andhra Pradesh : In Andhra Pradesh the nodal department for formulating policies for the procurement of paddy, coarse grains and pulses at MSP is Andhra Pradesh Civil Supplies Department headed by a Commissioner of Civil Supplies and Ex-Officio Secretary. For implementation and procurement operations at the field level, the Food and Civil Supplies Department is supported by the procurement agencies namely Andhra Pradesh Civil Supplies Corporation (APCSC) through Indira Kranti Pratham, a Self Help Group, Agriculture Marketing Division, and Food Corporation of India (FCI) along with the Rice Mills. The rice millers are allowed to sell rice through Certificates and Permits in the open market.

At the district level the MSP procurement operations are monitored and enforced by the Joint Collector (designated as Collector Civil Supplies). The Collector Civil Supplies, in turn, is supported by the District Supply Officer. However, the Procurement under MSP for cotton

is undertaken by the Cotton Corporation of India (CCI) directly through its procurement centers opened at few places. Major crops under MSP operations in the state are Paddy and Cotton.

3.1.2 Assam: The nodal agency for the procurement of paddy at MSP in the State is FCI. The FCI procures paddy through its Paddy Procurement Centers (PPCs). The Jute Corporation of India procures jute through its Departmental Purchase Centres (DPC).

3.1.3 Bihar: The nodal agency at the apex level is the Agriculture Department and the implementing agency in the state is the State Food Corporation (SFC) for food grains. At the district level, the officers who are involved in MSP implementation are the District Supply Officer (DSO), District Cooperative Officer (DCO), District Manager-SFC (DMSFC) and District Agriculture Officer (DAO). In the reference period, the procurements were undertaken at the Block Purchase Centres of FCI. In the year of survey, the Primary Agriculture Cooperative Societies (PACS) were at the lowest level. From the PACS the paddy is supplied to SFC which in turn gets it milled and supplied it to FCI. The FCI again releases food grain to the PDS through SFC and the required buffer stock is maintained. The PACS is an elected body with chairman as its head and a treasurer for managing the funds. The quantity of paddy which can be sold is dependent on the size and productivity of the holdings. The farmer is paid through account payee cheques of Cooperative Bank where PACS has the account. The PACS have been given revolving credit through the Cooperative Bank for payment to the farmers. The PACS then gives paddy to SFC purchase centre and the quantity is verified by the Enforcement Officer deputed by the District Magistrate. SFC makes payment to the PACS.

For procurement of sugarcane in Bihar, there is Sugarcane Industries Department at the State level which is the nodal department. There is Deputy Director (Cane) at Divisional level and District Cane Officer at district level. The sugar mills directly buy sugarcane from the farmers at the declared prices, i.e., FRP.

3.1.4 Gujarat: In Gujarat there is no separate mechanism for the implementation of MSP. The procurement part is managed by the Managing Director, Gujarat State Civil Supplies Corporation Limited (GSCSC) under the instructions/guidance of the Secretary, Food, Civil Supplies and Consumer Affairs Department. The GSCSC has procurement set up for its routine operations in all the districts through the Deputy District Manager Gr.-II and at Taluka level through the Taluka Supply Mamlatdar whereas the Agriculture Department has the District Agriculture Officer at the district Level.

3.1.5 Karnataka: The sub-agent of FCI is the Karnataka Food & Civil Supplies Corporation (KFCSC) which carries out the procurements in the State under the MSP operations. Paddy and other coarse grains are procured by KFCSC in order to prevent distress sale by the farmers. Before the start of harvesting season or around the time of harvest, the District Level Task Force Committee under the chairmanship of the Deputy Commissioner meets and decides to open the procurement centers for MSP in the required Blocks. The Agriculture Department in the district deputed trained Graders to these centres and publicity is done about the opening of centres for procurement under MSP. The Graders test the samples for FAQ standard requirements and on conformity to FAQ standards; the produce of the farmers is purchased at MSP fixed for particular

crop and variety. The agency disburses the amount to the farmers by crossed cheques within a week or fortnight.

3.1.6 Madhya Pradesh: The MSP scheme is being looked after by the Director, Food and it is being implemented through three nodal agencies, i.e., M.P. State Civil Supply Corporation, (MPSCSC), M.P. State Marketing Federation (MARKFED) and M.P. Warehousing and Logistics Corporation (MPWLC). After the declaration of MSP for both Rabi and Kharif crops, the government of Madhya Pradesh appoints the nodal agencies (Implementing agencies). These implementing agencies divide the procurement centres on the basis of last year's procurement and productivity. The crops procured from farmers is then transported and stored. The Nodal agencies arrange all facilities needed for the procurement of gunny bags, credit limit, storage facility, staff and inspection and upload the information every day on the government website. These agencies send daily reports to the state government or any authorities as required. The training /education is being imparted to the farmers on quality specifications, price policy, MSP operations, etc., by the government agency or through some other agencies with the approval of the state government.

3.1.7 Maharashtra: On behalf of FCI in the State, the procurement is implemented through the state agencies. The Maharashtra State Cooperative Marketing Federation Ltd. and the Tribal Development Corporation are the State agencies. Both the agencies are procuring paddy and coarse grains from the farmers. The procurement centres are opened in Agriculture Produce Marketing Committee (APMC) market yard. The procurement centres are also opened in each Taluka where Government / private godown space is available. Before the commencement of MSP

procurements, the Marketing Federation publishes the approval list in local newspaper and copy of the list is sent to the Gram Panchayats and concerned sub-agent societies.

The Cotton Corporation of India (CCI) and the National Agriculture Co-operative Marketing Federation (NAFED) are procuring cotton from the farmers. The Maharashtra State Cooperative Marketing Federation Ltd (MSCMF) is procuring cotton on behalf of NAFED. Paddy, jowar, bajra, maize, wheat and soybean are procured by MSCMF and Maharashtra State Cooperative Tribal Development Corporation.

3.1.8 Odisha: In Odisha the Food Supply & Consumer Welfare Department is the nodal agency for MSP operations of paddy, custom milling of paddy and procurement of levy rice. The procurement of paddy by the State agencies such as Odisha State Civil Supplies Corporation (OSCSC) supplements the paddy purchases made by the millers at MSP and higher price which will entitle them for delivery of levy. All the Heads of Departments, Collectors and procuring agencies concerned with the procurement of paddy furnish daily reports through SMS on paddy purchases at MSP to the State authority.

The district is the unit for opening of paddy purchase centres by the State agencies. The seasonal paddy purchase centres are opened by the State agencies in addition to the notified market yards. Open places like State Warehousing Corporation (SWC) and Central Warehousing Corporation (CWC) godowns are also notified as purchase centres for the purchase of paddy. The State agencies proactively participate in the purchases at market yards for the benefit of farmers. The required fund for purchase of paddy by the District Civil Supplies Corporation Ltd. is made available by the State Civil Supplies Department.

The Department informs the farmers about the MSP, FAQ specifications, etc. The farmers are insisted upon to bring Bank Passbooks for a quick disposal of their payments. The State Civil Supply Corporation has to be in constant touch with the District Administration regarding the requirement of gunny bags, funds and manpower for the procurement of paddy and custom milling. Advance action plan for custom milling of paddy with the respective/designated rice mills is drawn up by the OSCSC by entering into MoU with the rice millers in addition to agreeing to the incidentals and handling charges to avoid delays in custom milling of paddy. The employees at the purchase centres are accountable for the quality, quantity and maintenance of proper accounts. Regular SMS regarding the procurements of paddy from each purchase centre is sent to the State authority for effective monitoring and supervisions.

3.1.9 Punjab: The State Food & Civil Supplies Department Punjab is the nodal agency for procurement of food grains, viz., wheat and paddy under MSP. The markets and shops are also allotted by the Food & Civil Supplies Department to the authorized procurement agencies. The six authorized agencies for operation in Punjab State are the Punjab State Civil Supplies Corporation Limited (PUNSUP), MARKFED, Punjab Grains Procurement Corporation Ltd. (PUNGRAIN), Warehousing Corporation, Punjab Agro Corporation and FCI (Central Agency). The Director of Department of Agriculture, Punjab is the nodal department for crop estimation and production. The Director, State Food & Civil Supplies Department is the nodal department for procurement and Punjab Agriculture University, Economics Department for cost estimation.

3.1.10 Rajasthan: The State Government's Supervision and Monitoring Cell of Food Supply Department looks after the implementation of MSP in the State. The nodal agency for wheat is FCI, for commercial crops it is NAFED and for cotton it is the Cotton Corporation of India (CCI). The state agencies involved in procurement of wheat are Tilam Sangh, Rajasthan State Co-operative Marketing Federation Ltd. (RAJFED) and FCI. The State agencies involved in the procurement of commercial crops are Tilam Sangh and RAJFED. At the lowest rung of the MSO procurement activities, are the marketing society, KVSS.

The procurement operations under MSP are carried out by the FCI and State agencies. Since Rabi 1992-93, the state agencies manage their own funds and FCI makes payments of the cost of grain, mandi fees and arhat (commission) charges on deposition of stocks in FCI/RSWC/CWC/ARDC godowns. Wheat is procured directly from the farmers as well as through the Kachha Arhatias by all the procuring agencies under price support scheme. The stocks purchased by the State agencies are deposited with FCI under central pool at the godowns of FCI/RSWC/CWC/ARDC as per the plan chalked out by the Area Manager concerned.

3.1.11 Tamil Nadu: The implementation of MSP rests with the Tamil Nadu Civil Supplies Corporation Limited (TNCSC) which opens procurement centres in villages depending on the concentration of farmers. These procurement centres are known as Direct Purchase Centres (DPC). As soon as the farmers arrive at the DPCs with their produce, they are issued a token as per their arrival time and then they wait for their turn. At times, during the peak arrival of Paddy, farmers have to wait in DPCs for days and get their sale proceeds at MSP rates as and when the

sales are effected. The procurement activities of paddy are monitored by the Senior Regional Managers (SRM) of the TNCSC through their subordinate officers posted in every district.

As regards the sugarcane, the implementation of MSP rests with the Directorate of Sugar, Tamil Nadu and its procurement is governed by the provisions of Sugarcane Control Order, 1966 and Tamil Nadu Sugar Factories Control Act, 1949. Under this Act, every sugarcane grower is attached to a particular Sugar Mill and all the necessary inputs required for sugarcane cultivation is given to the sugarcane grower by the concerned sugar mills. The entire output of sugarcane harvested by each of the sugarcane grower is taken over by the concerned Sugar Mill. The Sugarcane growers are paid at the State Advisory Price (SAP) rate which includes a special bonus component provided by the sugar mills over and above the MSP. The SAP of sugarcane is announced by the State Government based on the consensus arrived in the consortium of sugar mill owners, farmers and government representative.

The TNCSC is in-charge of the procurement of paddy in the State. The main function of the Corporation is to procure Paddy and process it through their rice mills and store in its godowns. The Corporation also procures other essential commodities like sugar, wheat, etc., store and move such stocks for its distribution from the Taluk operational godowns to the various public distribution system outlets.

The Tamil Nadu Cooperative Marketing Federation Ltd (TANFED), designated agency of NAFED for procurement in Tamil Nadu, is authorised to procure pulses, oilseeds and copra in Tamil Nadu under MSP. Yet TANFED has not procured any quantity of pulses and oilseeds as

the prices of these two commodities have been ruling above MSP. However, the TANFED has procured Copra under the price supportive scheme, since the price of copra has been declining and ruling below the MSP.

3.1.12 Uttar Pradesh: The nodal agency involved in the procurement is Food and Civil Supply Department under whom there is the Commissioner Food and Civil Supply and Regional Food Controller. Agencies like PCF, UP Agro, UPSS, SFC, SWC and KKN are the State agencies which along with the Department of Food and Civil Supply are involved in the purchasing crops at MSP from the farmers in Uttar Pradesh. The procurement period of paddy is from 1st October to 28th February and for wheat it is 1st April to 30th June every year. The timings at purchase centres are from 8AM to 5PM every day. The timings can be altered with the approval of DM. Purchase centres are opened in such a way that farmer is not supposed to travel beyond 7 kms.

3.1.13 West Bengal: The Food and Supplies Department is responsible to undertake the procurement operations through the rice mills and Custom Mill Rice Agencies. The Directorate of District Distribution, Procurement & Supply is the main executive wing of the Department of Food and Supplies which is responsible for setting up of district-wise targets. Apart from the Directorate, there are three regional offices headed by a Joint Director. There are 18 District Controllers of Food & Supplies (DCF&S) Offices at the district level and under them there are Sub-Divisional Controller of food & Supplies (SCF&S) Offices. There is a team of Chief Inspectors, at the DC F&S and SC F&S Offices. The District Controller (F&S) represents the Food & Supplies Department at the district level and is responsible for monitoring of the procurement

and public distribution system. The Jute Corporation of India procures Jute through its Departmental Purchase Centres (DPC).

3.1.14 Madhya Pradesh: There is no separate set up for the implementation of MSP in the State. The MSP is looked after by the State Commissioner-cum-Director of Food, Civil Supplies and Consumer Conservation. The MSP procurements are managed by the Managing Director, M.P. State Civil Supplies Corporation Limited (MPSCSC) under the instructions/guidance of the Secretary, Food, Civil Supplies and Consumer Affairs Department. The MPSCSC has procurement set up in all districts and Block level.

3.2 Performance of Agencies in Implementation of MSP

The various agencies in the states are entrusted with the task of procurements under MSP and for which they are assigned targets. The performance of the agencies can be judged by the quantity procured under their jurisdiction. The details of various states have been summed up in figures based on the data collected from the field.

3.2.1 Andhra Pradesh: The procurement agencies provide technical training to the persons handling PPCs to purchase fair average quality of paddy from the farmers at MSP. Due to the market intervention by the government agencies and increased purchase centres, the traders/millers quote good remunerative prices to the paddy purchased by them from the farmers. Open places like SWC and CWC godowns are also notified as purchase centres for purchase of paddy at MSP. The funds for purchase of paddy are given by AP State Civil Supplies Corporation. At the district level, the District Collector is the in-charge and he is assisted by the District Supply Officer. The AP State Civil Supplies Corporation is entrusted

with the task of procurement of paddy. Even FCI opens as many purchase centres as asked for by the Collector of the district. The procurements made under MSP, Market Intervention Schemes (MIS) and Commercial Operations (Com) are

tabulated below. However, no information on procurements of pulses, oilseed and Cash Crops, etc., were available for the period from 2007-08 to 2010-11.

Table 3.1. Crop procurement under MSP in Andhra Pradesh (in 000 tons)

Crop-Paddy	Under	2007-08	2008-09	2009-10	2010-11
(1)	(2)	(3)	(4)	(5)	(6)
Andhra Pradesh	MSP	134,79,071	186,73,358	150,04,324	188,49,276
	MIS	NA	NA	NA	NA
	Com.	NA	NA	NA	NA
	Total	134,79,071	186,73,358	150,04,324	188,49,276

3.2.2 Assam: The procurement of paddy is being done by the FCI as tabulated below. It needs to be mentioned here that there is no state level structure under Jute Corporation of India (JCI) for the procurement of Jute. Hence procurement figure of jute for Assam is unavailable. The information about the paddy procurements in Assam is tabulated below.

Table 3.2. Paddy Procurement in Assam

Year	Quantity Procured (000 tonnes)		
	Under MSP	Under Commercial	Total
(1)	(2)	(3)	(4)
2007-08	Not Available	NIL	Not Available
2008-09	4.103	NIL	4.103
2009-10	12.146	NIL	12.146
2010-11	23.283	NIL	23.283

3.2.3 Bihar: The agency undertaking procurements at the State Level is SFC and in every district it has its functionaries who undertake procurement related activities. The SFC undertakes mainly procurement of food grains like wheat, rice and maize in the state. The procurement in the district is monitored and supervised by the Collector and Supply Officers. The actual procurement takes place at the village level through PACS since 2011-12. However, in previous years the procurement work was done

by FCI through its purchase centres at the Block level. The performance in those years was not considered good as none of the sample household sold their produce at MSP to the government purchase centers during the previous years. The total amount procured in the reference period has been tabulated below.

Table 3.3. Procurement for Bihar

Year	Name of crop	Quantity in lakh M.T
(1)	(2)	(3)
2007-08	Paddy	8.28
	Wheat	0.08
2008-09	Paddy	16.17
	Wheat	4.99
2009-10	Paddy	13.29
	Wheat	4.96
2010-11	Paddy	13.17
	Wheat	1.833
2011-12	Paddy	22.872
	Wheat	5.56
	Levy Rice	5.56

3.2.4 Gujarat: There are mainly two agencies, viz., Cotton Corporation of India and Gujarat State Civil Supplies Corporation Limited (GSCSC Ltd.) for MSP operations in the State under the supervision of State government and Food Corporation of India. FCI is the main agency for the procurement of paddy, wheat and bajra. NAFED and CCI procure cotton and groundnut in the state.

Table 3.4. Cotton Procurement under MSP in Gujarat

Years	Quantity Procured (000 Tonnes)			Value (Rs. in Lakhs)		
	MSP	Commercial	Total	MSP	Commercial	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Cotton Corporation of India (CCI), Ahmedabad.						
2007-08	36257.50	0	36257.50	8831.42	0	8831.42
2008-09	289444.60	0	289444.60	81510.41	0	81510.41
2009-10	83.80	4959.00	5042.80	23.80	1578.94	1602.74
2010-11	0	58140.90	58140.90	0	26564.57	26564.57
2011-12	0	20995.00	20995.00	0	9019.11	9019.11
Cotton Corporation of India (CCI), Rajkot						
2007-08	0	23199.41	23199.41	0	6046.25	6046.25
2008-09	315018.60	0	315018.60	89698.45	0	89698.45
2009-10	0	4550.87	4550.87	0	1510.92	1510.92
2010-11	0	58275.45	58275.45	0	29197.99	29197.99
2011-12	0	78462.31	78462.31	0	34133.52	34133.52
GUJCOMASOL						
2007-08	0	0	0	0	0	0
2008-09	0	589.37	589.37	0	110.85	110.85
2009-10	0	9353.13	9353.13	0	2837.72	2837.72
2010-11	0	0	0	0	0	0
NAFED, Ahmedabad						
2007-08	0	0	0	0	0	0
2008-09	5.85	0	5.85	16672.50	0	16672.50
2009-10	0	0	0	0	0	0
2010-11	0	0	0	0	0	0
Gujarat State Co-Operative Cotton Federation Ltd. (GUJCOT), Ahmedabad						
2007-08	0	29050	29050	0	2469.66	2469.66
2008-09	0	8647	8647	0	801.74	801.74
2009-10	0	7893	7893	0	670.48	670.48
2010-11	0	49116	49116	0	4467.25	4467.25

Table 3.5 Other Procurements under MSP in Gujarat

NAFED & GUJCOMASOL, Ahmedabad's procurement of GROUNDNUT						
Years	Quantity Procured (000 Tonnes)			Value (Rs.in Lakhs)		
	MSP	Commercial	Total	MSP	Commercial	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2007-08	2366.279	0	2366.79	602.95		602.95
2008-09	0	0	0	0	0	0
2009-10	1531.472	0	1531.472	455.76	0	455.76
2010-11	0	0	0	0	0	0
NAFED, Ahmedabad's procurement of TUR						
2007-08	0	485.686	485.686	0	123.65	123.65
2008-09	0	191.059	191.059	0	70.16	70.16
2009-10	0	468.149	468.149	0	197.93	197.93
2010-11	0	1000.00	1000.00	0	500.00	500.00
GUJCOMASOL, Ahmedabad's procurement of TUR						
2007-08	0	390.218	390.218	0	95.65	95.65
2008-09	0	0	0	0	0	0
2009-10	0	0	0	0	0	0
2010-11	0	0	0	0	0	0
GUJCOMASOL & NAFED, Ahmedabad's procurement of Other pulses						
2007-08	0	34.812	34.812	0	10.12	10.12
2008-09	0	47.960	47.960	0	14.31	14.31
2009-10	0	203.206	203.206	0	63.53	63.53
2010-11	0	210.00	210.00	0	70.00	70.00
GSCSCL, FCI's & NAFED's procurement of Wheat						
2007-08	619.00	0	619.00	0	0	0
2008-09	0	0	0	0	0	0
2009-10	0	0	0	0	0	0
2010-11	0	0	0	0	0	0

In addition to the above, the procurements made by the National Agriculture Co-operative Marketing Federation of India (NAFED), Ahmedabad is given in Annexure-IV.

3.2.5 Karnataka: Paddy and other coarse grains are procured by the Karnataka Food & Civil Supplies Corporation (KFCSC). The Corporation has its trained graders for meeting FAQ specifications. The farmers are required to bring Pahani

and the payment is done through crossed cheques to the farmers. Wide publicity is done regarding the procurement centres, specifications and MSP prices, etc. The procurements made under MSP, Market Intervention Schemes (MIS) and Commercial Operations (Com) have been tabulated below. However, no procurements of pulses, oilseed and Cash Crops were carried out in the State during the years from 2007-08 to 2010-11.

Table 3.6. Procurements in Karnataka

(In '000 tonnes)

Crops	Scheme	2007-08	2008-09	2009-10	2010-11
(1)	(2)	(3)	(4)	(5)	(6)
Paddy	MSP	0.022	0.366	15.454	35.200
	MIS	NA	NA	NA	NA
	Com.	NA	NA	NA	NA
	Total	NA	NA	NA	NA
Others (Maize)	MSP	2.292	453.395	315.248	375.620
	MIS	NA	NA	NA	NA
	Com.	NA	NA	NA	NA
	Total	NA	NA	NA	NA
Others (Jowar)	MSP	0.816	0	0	0
	MIS	NA	NA	NA	NA
	Com.	NA	NA	NA	NA
	Total	NA	NA	NA	NA
Others (Ragi)	MSP	10.703	12.123	0.306	2.283
	MIS	NA	NA	NA	NA
	Com.	NA	NA	NA	NA
	Total	NA	NA	NA	NA

3.2.6 Madhya Pradesh: The nodal agencies viz MPCSC, MARKFED, MPWLC arrange all facilities needed for the MSP procurements, i.e., gunny bags, credit limit, storage facility, staff and inspection. The information regarding procurement is uploaded regularly on the government website. Training is imparted to the farmers on quality specifications, price policy, MSP operations, etc. A triangular coordination amongst the farmer, nodal agency and the government

authorities exists. Reports are sent to the government of India also. A committee of Collector, Revenue, Agriculture, Co-operative Society representatives does the physical verification of the MSP operations. The procurements of food grains (wheat, maize & paddy) carried out under MSP operations are tabulated below. However, no procurements of pulses, oilseed and Other Cash Crops were carried out in the State during the years from 2007-08 to 2010-11.

Table 3.7. Procurement for Madhya Pradesh

(In '000' tonnes)

Crops	Under	2007-08	2008-09	2009-10	2010-11
(1)	(2)	(3)	(4)	(5)	(6)
Food grains (wheat, Maize & Paddy)	MSP	158334	2693235	2117309	3937380
	MIS	0	0	0	0
	Com.	0	0	0	0
	Total	158334	2693235	2117309	3937380

3.2.7 Maharashtra: FCI works through the state designated agency (Maharashtra State Cooperative Marketing Federation Ltd. & Tribal Development Corporation). The Collector approves the list of procurement centres in each taluka where godowns are available. Before commencing of

MSP operations publicity is done by the department for awareness among the farmers. The procurements made under MSP, Market Intervention Schemes (MIS) and Commercial Operation (Com) are tabulated below.

Table 3.8. Crop Procurements in Maharashtra

(In 000 tonnes)

Crop-Paddy	Under	2007-08	2008-09	2009-10	2010-11
(1)	(2)	(3)	(4)	(5)	(6)
Paddy	MSP	45.83	69.33	109.15	80.8
	MIS	0	0	0	0
	COM.	538.3	842.12	714.24	863.37
	Total	584.13	911.45	823.39	944.17
Jowar	MSP	0.1	51.29	0.64	0.36
	MIS	0	0	0	0
	COM.	308.25	547.26	583.53	382.54
	Total	308.25	598.55	584.17	382.9
Bajara	MSP	0	0.86	0	0
	MIS	0	0	0	0
	COM.	99.34	155.35	145.03	NA
	Total	99.34	156.21	145.03	0
Maize	MSP	1.65	58.48	52.96	0.21
	MIS	0	0	0	0
	COM.	457.47	685.26	701.51	NA
	Total	459.12	743.74	754.47	0.21
Tur	MSP	0	0	0	0.34
	MIS	0	0	0	0
	COM.	347.17	458.59	434.87	382.55
	Total	347.17	458.59	434.87	382.89
Oilseeds	MSP	0.03	0	0	0
	MIS	0	0	0	0
	COM.	2.96	13.23	9.85	NA
	Total	2.99	13.23	9.85	0
Sunflower Seed	MSP	0	2.76	0.04	0
	MIS	0	0	0	0
	COM.	42.7	119.5	720.09	NA
	Total	42.7	122.26	720.39	0
Cotton	MSP	1.29	641.63	1.49	0
	MIS	0	0	0	0
	COM.	348.31	45	224.39	353.43
	Total	349.6	6686.63	225.78	353.43
Sugarcane	MSP	76174	40042	61747	80252
	MIS	0	0	0	0
	COM.	0	0	0	0
	Total	76174	40042	61747	80252

3.2.8 Odisha: District Civil Supply Department is authorized to open as many paddy purchase centres as required to make brisk purchases of paddy. The seasonal paddy purchase canter are opened by the State agencies in addition to the notified market yards. The agency OSCSC educates the farmer regarding the cleaning of pro-

duce, FAQ specifications, procurement centres and other information through pamphlets and media interventions. The total procurement of paddy in Odisha carried out by OSCS, NAFED, MARKFED & OTDCC is given in the table below:

Table 3.9. Crop Procurement in Odisha

Year	Quantity Procured (In M.T)			Value (in Lakhs)		
	MSP	Commercial	Total	MSP	Commercial	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2007-08	3635320	0	3635320	270.83	0	270.83
2008-09	4487917	0	4487917	403.91	0	403.91
2009-10	3974932	0	3974932	397.49	0	397.49
2010-11	3696543	0	3696543	369.65	0	369.65

3.2.9 Uttar Pradesh: FCI and various State Agencies in consultation with the State Government establish a large number of purchase centres at various mandis and key points. The government of Uttar Pradesh issues instructions to different procurement agencies in the state for MSP operations. During the harvest season, the farmers bring their produce to the procurement agencies as nominated by the Food and Civil Supply department. In case of sugarcane, the area

under sugarcane is surveyed by the sugar mills and the purchase of sugarcane under MSP is assured. The sugarcane farmers are attached to the sugar mills and they get the benefit of State Advisory price (SAP) for sugarcane including the bonus component. Agencies like PCF, UP Agro, UPSS, SFC, SWC and KKN are the state agencies which along with the Department of Food and Civil Supply are involved in the purchasing crops from the farmers in Uttar Pradesh.

Table 3.10. Crop Procurement under MSP in UP

Year	Quantity Procured (000 tonnes)			Value (in Lakhs)	
	Wheat	Paddy	Total	Wheat	Paddy
(1)	(2)	(3)	(4)	(5)	(6)
2007-08	545673	2214955	545673	4638.24	120296.188
2008-09	2945658	3271620	2945658	29456.58	215753.94
2009-10	3727908	1403816	3727908	39886.14	140305
2010-11	1642248	1446172	1642248	17794.93	105458.55

3.2.10 Uttarakhand: The Food and Civil Supplies Department and Cooperative Department are the main state agencies involved in the

implementation of MSP. The procurements made in the State under MSP and Commercial Operation (Com) are tabulated below.

Table 3.11. Procurements in Uttarakhand

Name of the commodity: Wheat						
Year	Quantity Procured (000 tonnes)			Value (in Lakhs)		
	Under MSP	Under Commercial	Total	Under MSP	Under Commercial	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2007-08	1.834	-	1.834	155.89	-	155.89
2008-09	84.607	-	84.607	8460.7	-	8460.7
2009-10	144.798	-	144.798	15638.18	-	15638.18
2010-11	86.237	-	86.237	9486.07	-	9486.07

Name of the commodity: Paddy						
Year	Quantity Procured (000 tonnes)			Value (in Lakhs)		
	Under MSP	Under Commercial	Total	Under MSP	Under Commercial	Total
2007-08	18.234	-	718.234	1358.44	-	1358.44
2008-09	10.225	-	10.225	920.26	-	920.26
2009-10	35.704	-	35.704	3570.4	-	3570.4
2010-11	14.872	-	14.872	1487.2	-	1487.2

3.2.11 Punjab: The State Food & Civil Supplies Department of Punjab is the nodal agency for the procurement of food grains, viz., wheat and paddy. The markets and shops are also allotted by the Food & Civil Supplies Department to the authorized procurement agencies. The six authorized agencies in MSP operations in Punjab are: the Punjab State Civil Supplies Corporation Limited (PUNSUP), MARKFED, Punjab Grains Procurement Corporation Ltd. (PUNGRAIN), Warehousing Corporation, Punjab Agro Corporation and FCI (Central Agency). The Director of Department of Agriculture, Punjab is the nodal department for crop estimation and production. The Director, State Food & Civil Supplies Department is the nodal department for procurement and Punjab Agriculture University, Economics Department for the cost estimation.

Table 3.12. Procurements in Punjab

Name of the commodity: Wheat						
Year	Quantity Procured (000 tonnes)			Value (in Lakhs)		
	Under MSP	Under Commercial	Total	Under MSP	Under Commercial	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2007-08	62600.24	189.90	62790.14	504463.39	1820.70	506284.09
2008-09	89766.00	NA	89766.00	965512.68	NA	965512.68
2009-10	91163.38	NA	91163.38	1067597.43	NA	1067597.43
2010-11	85604.23	NA	85604.23	1017524.48	NA	1017524.48

(Contd.)

Table 3.12. (Concl.d.)

Name of the commodity: Paddy						
Year	Quantity Procured (000 tonnes)			Value (in Lakhs)		
	Under MSP	Under Commercial	Total	Under MSP	Under Commercial	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2007-08	101939.31	NA	101939.31	715466.48	NA	715466.48
2008-09	119378.99	NA	119378.99	1100187.92	NA	1100187.92
2009-10	132115.17	NA	132115.17	1331182.90	NA	1331182.90
2010-11	124050.48	NA	124050.48	1307790.74	NA	1307790.74

Source: Directorate, Food Civil Supplies & Consumer Affairs Department, Punjab

3.2.12 West Bengal: The Food and Supplies Department Govt. of West Bengal manages the procurement of paddy/rice under MSP and it operates through three sub-agencies, i.e., NAFED (National Agriculture Cooperative Marketing Federation of India Ltd.), NCCF (National Cooperative Consumers Federation of India Ltd.) and WBECSC (West Bengal Essential Commodities Supply Corporation Ltd.). There is no state level structure under JCI for the procurement of Jute. Hence procurement figure for Jute is not available. The rice procurements made by the Food and Supplies Department, Govt. of West Bengal were as under:

Table 3.13. Procurement in West Bengal

Year	Quantity Procured (000 tonnes)			Value (in Lakhs)		
	Under MSP	Under Commercial	Total	Under MSP	Under Commercial	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2007-08	1431	NIL	1431	Not Available		
2008-09	1739	NIL	1739			
2009-10	1295	NIL	1295			
2010-11	NA	NIL	NA			

3.2.13 Tamil Nadu: Out of the total 24 commodities notified by the Government of India under MSP, 7 crops, viz., Paddy, Sugarcane, Black Gram, Green Gram, Red Gram, Groundnut, Gingeley and Cotton are notified in the State for MSP operations. Among these commodities, the Paddy, Sugarcane, Copra and sometimes Cotton, are subjected to the procurement by the State Government. However, the in the State of Tamil

Nadu except paddy and sugarcane, the remaining commodities are not covered under MSP procurement. However, these are covered under the Market Intervention Scheme (MIS) of Government of India. The procurements made under MSP, Market Intervention Schemes (MIS) and Commercial Operation (Com) in the State are tabulated below.

Table 3.14. Procurements of crops under MSP and MIS operations in Tamil Nadu

(In '000' tonnes)

Crops	Under	2007-08	2008-09	2009-10	2010-11
(1)	(2)	(3)	(4)	(5)	(6)
Paddy	MSP	1449.46	1792.81	1863.128	2310.342
	MIS	NA	NA	NA	NA
	COM.	NA	NA	NA	NA
	Total	1449.46	1792.81	1863.128	2310.342
Sugarcane	MSP	274.49	229-68	165.72	142.99
	MIS	Nil	Nil	Nil	Nil
	COM.	Nil	Nil	Nil	Nil
	Total	274.49	229-68	165.72	142.99
Copra	MSP	Nil	Nil	Nil	Nil
	MIS	5.676	0	27.045	7.434
	COM.	NA	NA	NA	NA
	Total	NA	NA	NA	NA

* During the period of study, the MSP of Oilseeds and Pulses (Black gram and Green Gram) prevailed below their wholesale price in the State. Hence, no procurements were made.

3.2.14 Rajasthan: MSP procurement operations are carried out by FCI and state agencies like RAJFED and Tilam Sangh. The procurements made under MSP, Market Intervention Schemes (MIS) and Commercial Operation (Com) in the

State are tabulated below. However, no information on procurements of pulses, oilseed and Cash Crops, etc. carried out in the State were available for the period from 2007-08 to 2010-11.

Table 3.15. Paddy Procurement for Rajasthan

(In '000' tonnes)

Scheme	2007-08	2008-09	2009-10	2010-11
(1)	(2)	(3)	(4)	(5)
MSP	383876	935286	1152048	475894
MIS	NA	NA	NA	NA
COM.	NA	NA	NA	NA
Total	383876	935286	1152048	475894

3.3 Identification of Regional and Inter Crop Price Variations

The main envisaged role of MSP is to reduce the seasonal and regional fluctuations in the price of the different MSP notified commodities especially when their prices drop sharply in the event of a glut in production. The attempt has been made to analyze the inter crop price variations in the selected states within district and between/among districts in a State.

3.3.1 Andhra Pradesh: It was observed that Wholesale Price in West Godavari for paddy has been less than the state average wholesale prices and the price in the other selected district of Nalgonda. This gap became more pronounced in the year 2009-10. However, in 2010-11 the prices seems to follow a trend. It was also seen that the price increase of 2122 per cent in the year 2008-09 has been the highest increase in the reference period.

Table 3.16. Wholesale Prices of Paddy and their Variations in Andhra Pradesh

State/ District	Year	Wholesale prices (Rs. Per quintal)			Increase over previous year
		Max	Min.	Paddy	
(1)	(2)	(3)	(4)	(5)	(6)
Andhra Pradesh	2007-08	810	620	722	NA
	2008-09	970	764	884	22%
	2009-10	1202	932	1038	17%
	2010-11	1054	1018	1039	0.1%
West Godawari	2007-08	771	648	703	
	2008-09	939	735	855	22%
	2009-10	1073	840	955	12%
	2010-11	1069	994	1029	7.7%
Nalgonda	2007-08	828	596	723	
	2008-09	1065	738	919	21%
	2009-10	1250	872	1005	8.6%
	2010-11	1059	966	1019	1.4%

3.3.2 Assam: The variations in the Minimum Price and Maximum Prices of major crops which have been covered under MSP operations, can be seen in the following table. The information was provided only for the district Dhubri and the information for the district Goalpara, though requested for, was not provided by the State authorities.

Table 3.17. Wholesale Prices and their Variations in Assam

Districts	Years	Variation of wholesale prices in major Crops (Rs. Per quintal)					
		Paddy		Jute		Mustard	
		Max.	Min.	Max.	Min.	Max.	Min.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dhubri	2007-08	900	750	1950	1900	2000	1900
	2008-09	1000	800	1900	1700	1950	1600
	2009-10	1000	800	2400	2000	2400	2000
	2010-11	1000	800	3050	2800	2200	2000
Goalpara	2007-08						
	2008-09						
	2009-10						
	2010-11						

3.3.3 Bihar: The food grains produced in the State are wheat, paddy and maize. Apart from the food grains, the major productions are oilseeds, fibre crops, pulses, sugarcane, etc. The agriculture is basically subsistence and acreage under food grain production is more than 90 per cent. The percentage of cereals accounts for almost 85 per cent and w.r.t. the pulses it is around 8 per cent. The oilseeds, fibre, etc. form the rest of the production (Economic survey: Bihar). Since the mandis have been abolished in Bihar, there is no official source for comparing the maximum and

minimum prices that prevailed in the State/districts.

3.3.4 Gujarat: Due to the climatic variation and soil conditions, there is a wide variation in the crop prices. The fertility/productivity of crops also differs from area to area. The regions in Gujarat have been divided in to 8 agro-climatic regions according to the rainfall. Wheat, Bajra, Jowar and Cotton crops are grown almost in all climatic zones but its productivity is different in different area.

Table 3.18. Wholesale prices and their Variation in Gujarat

District	Year	Groundnut		Cotton		Wheat		Cumin		-	
		Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Rajkot	2007-08	2910	2036	4018	3900	1075	950	11000	9750	-	-
	2008-09	2400	2320	4030	3920	1100	1020	11250	10200	-	-
	2009-10	2510	2390	4210	3800	1120	1060	11400	10900	-	-
	2010-11	2660	2575	4318	3880	1375	1200	11820	11400	-	-
District	Year	Tur		Cotton		Soyabean		Maize		Paddy	
		Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
Narmada	2007-08	3000	2000	3000	2650	1180	900	1100	664	1100	760
	2008-09	3000	2500	3200	2600	1200	1000	880	723	880	750
	2009-10	4100	2650	4200	2858	1500	1200	1100	680	1250	1040
	2010-11	3600	3100	3550	2800	1800	1500	1400	900	1300	1060

3.3.5 Karnataka: The wholesale Prices of major crops of the selected Bellary and Mandya districts can be seen in the table below. It was seen that there was no variation in the wholesale price of MSP crops within the district and blocks except

for a small variation of Rs. 3 for paddy during 2009-10 in Shirangapatna block of Mandya district. The wholesale price of MSP crops within the Bellary district was found to be same throughout the district.

Table 3.19. Wholesale prices and their Variation in Karnataka

District	Year	Variation in wholesale prices in major Crops (Rs. Per quintal)					
		Paddy		Maize		Ragi	
		Max.	Min.	Max.	Min.	Max.	Min.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Bellary	2007-08	795	675	700	620		
	2008-09	1060	930	1150	840		
	2009-10	1120	980	1000	840		
	2010-11	1220	1030	1180	880		
Mandya	2007-08	795	675			910	600
	2008-09	1060	930			1180	600
	2009-10	1120	980			1275	800
	2010-11	1220	1030			1280	800

3.3.6 Madhya Pradesh: The Soyabean is grown predominantly in the districts of Raisen, Vidisha, Rajgarh, etc. whereas wheat is predominantly grown in Chhindwara, Dhar, Shajapur & Burhanpur. The gram is grown mainly in Chhindwara, Dhar, Shajapur, and Maize is predominantly grown in the area of Jhabua, Ashok Nagar, and Chhindwara. The cotton is grown in Indore, Khargone and Ashok Nagar. Efforts have also been made to collect the variation of maximum and minimum prices which have been populated in the following table:

Table 3.20. Wholesale Prices and their Variation in Madhya Pradesh

Districts	Years	(Rs. Per Quintal)									
		Wheat		Maize		Gram		Soyabean		Cotton	
		Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Chhindwara	2007-08	1158	800	702	526	2500	1691	2372	1200		
	2008-09	1200	762	1083	615	2400	1650	2630	1200		
	2009-10	1700	900	975	745	2291	1600	2670	1700		
	2010-11	1510	900	1060	700	2336	1451	2461	1500		
Dhar	2007-08	1200	850	750	650	2400	1800	2200	1300	2400	1800
	2008-09	1200	850	850	700	2250	1750	2450	1300	3000	2200
	2009-10	1600	1050	850	700	2100	1800	2350	1300	3250	2625
	2010-11	1600	1200	1100	750	2250	1800	2400	1300	5000	3150
Shajapur	2007-08	1225	820	700	500	4375	1650	2325	1200		
	2008-09	1212	900	825	650	4265	1340	3000	1300		
	2009-10	1595	800	880	670	5410	1400	2740	1600		
	2010-11	1560	700	950	700	4950	1500	2460	1625		
Burhanpur	2007-08	1281	670	1000	351	2450	1600	2270	800	2800	1800
	2008-09	1284	800	1126	400	2400	1600	2600	601	3200	1700
	2009-10	1861	1000	1025	572	2300	1600	2670	1300	3600	2000
	2010-11	1652	1000	1142	400	2350	1480	2421	1205	6730	3500

3.3.7 Maharashtra: The variations in the maximum prices and minimum prices w.r.t. the major crops in the selected districts of Maharashtra is presented in following table.

Table 3.21. Wholesale Prices and their Variations in Maharashtra

(Rs. Per Quintal)

Districts	Years	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Tur		Soybean		Jowar		Gram	
Yavatmal	2007-08	2731	1900	2375	1089	690	526	2740	1178
	2008-09	3550	2170	2829	1401	854	538	2560	1455
	2009-10	6000	2881	2700	1650	940	700	2425	1700
	2010-11	4800	2900	2500	1500	970	700	2500	1700
		Paddy		Groundnut		Soybean		Sugarcane	
Kolhapur	2007-08	1000	600	5001	2100	2150	1425	92.9	92.9
	2008-09	1300	700	5000	1850	2650	1525	170	170
	2009-10	1600	750	2650	2200	2300	2295	201	201
	2010-11	1500	850	5555	2211	2050	1705	200	200
		Jowar		Tur		Soybean		Gram	
Latur	2007-08	1035	460	3151	1755	2362	1190	2950	1500
	2008-09	1125	584	3721	2125	2840	1433	2799	1511
	2009-10	1000	630	6300	3068	2708	1800	2770	1680
	2010-11	1610	667	5065	2401	2450	1351	3018	1250

It can be seen from the tables that there is variation in Maximum and Minimum prices of Jowar, Tur, Soybean and Gram in the selected districts of Maharashtra.

3.3.8 Odisha: Paddy is the only major crop procured under MSP at present in Odisha. The variations in the wholesale prices of paddy in the sample districts during the reference period are as below:

Table 3.22 District wise wholesale Maximum and Minimum Price

(Rs. Per quintal)

Districts	Years	Max	Min
(1)	(2)	(3)	(4)
Khurda	2007-08	700	645
	2008-09	850	750
	2009-10	950	800
	2010-11	1000	900
Mayurbhanj	2007-08	645	490
	2008-09	850	730
	2009-10	950	800
	2010-11	1000	900
Bargarh	2007-08	650	645
	2008-09	850	750
	2009-10	950	850
	2010-11	1000	950

3.3.9 Rajasthan: Like other states, the prices vary not only across the States but also across the districts within a State and even across markets. The district-wise variations in the maximum and minimum price is given in the following table:

Table 3.23. District-wise wholesale prices variation in Rajasthan

(Rs. Per quintal)

Districts	Years	Wheat		Mustard		Cotton	
		Max.	Min.	Max.	Min.	Max.	Min.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Bundi	2007-08	1090	721	2150	1360	-	-
	2008-09	1095	750	2275	1835	-	-
	2009-10	1810	900	2680	2641	-	-
	2010-11	1770	1100	2500	2000	-	-
Rajsamand	2007-08	1275	900	-	-	2850	-
	2008-09	1180	1040	-	-	3250	-
	2009-10	1180	1040	-	-	3250	-
	2010-11	1190	1170	-	-	4550	-
Sri Ganganagar	2007-08	1050	900	1600	1400	3500	2000
	2008-09	1150	950	1800	1500	4000	2500
	2009-10	1300	1000	2800	1900	7000	3500
	2010-11	1400	1050	3800	3200	4500	3100

3.3.10 Tamil Nadu: The difference between the maximum price and minimum price in respect of all the selected commodities during the reference period which have been populated in the following table:

Table 3.24. Wholesale prices variation in Tamil Nadu

(Rs. Per quintal)

Districts/Blocks	Years	Paddy		Black gram		Green gram	
		Max.	Min.	Max.	Min.	Max.	Min.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Thiruvavur District	2007-08	650	500	2900	2650	2650	2400
	2008-09	1083	800	3250	2800	3250	2800
	2009-10	1100	720	4500	4300	5750	5700
	2010-11	1290	960	4500	3900	5750	5750
Thiruvavur District/ Muthupet Block	2007-08	640	600	2900	2800	2500	2400
	2008-09	1000	900	3250	2800	3250	3250
	2009-10	1000	960	4550	4450	5750	5700
	2010-11	1000	960	4600	4400	5750	5700

(Contd.)

Table 3.24. (concl.)

Thiruvapur District/	2007-08	750	600	2700	2650	2650	2600
Thiruvapur Block	2008-09	930	900	2900	2800	3250	3250
	2009-10	720	690	4350	4300	5750	5700
	2010-11	1000	960	4000	3900	5400	5350
Pudukottai District	2007-08	967	720	2400	2400	3375	3375
	2008-09	1333	900	3400	2600	3375	3250
	2009-10	1750	1525	5400	4300	3800	3400
	2010-11	1379	1083	5000	4254	5700	4550
Pudukottai District/ Avudayark oil Block	2007-08	967	750				
	2008-09	1333	900				
	2009-10	1750	1525				
	2010-11	1379	1083				
	Year	Paddy		Black gram		Groundnut	
	Years	Max.	Min.	Max.	Min.	Max.	Min.
Pudukottai District/	2007-08	940	720	2600	2400	3375	3375
Thiruvankulam Block	2008-09	1333	900	3400	2600	3375	3250
	2009-10	1750	1525	5400	4300	3800	3400
	2010-11	1379	1083	5000	4254	5700	4550

Source: Data collected in the field

3.3.11 Uttar Pradesh: Barring paddy, the price variations were found to be prevalent among the three commodities of Black Gram, Green Gram and Groundnut among the selected districts of the State. Among the 4 commodities chosen for analysis, the paddy alone is subjected to MSP procurement and the remaining three are covered under MIS. Significant differences between the maximum and minimum prices noticed in the districts have been given in the following table:

Table 3.25. District wise wholesale Maximum and Minimum Price

		(Rs. Per quintal)			
Districts	Years	Wheat		Paddy	
		Max.	Min.	Max.	Min.
(1)	(2)	(3)	(4)	(5)	(6)
Etawah	2007-08	950	825	700	645
	2008-09	1100	950	870	850
	2009-10	1125	1080	960	950
	2010-11	1135	1020	1020	1000
Faizabad	2007-08	950	825	700	645
	2008-09	1100	950	870	850
	2009-10	1125	1080	960	950
	2010-11	1135	1020	1020	1000

(Contd.)

Table 3.25. (Concl'd.)

Districts	Years	(Rs. Per quintal)			
		Wheat		Paddy	
		Max.	Min.	Max.	Min.
(1)	(2)	(3)	(4)	(5)	(6)
Gautam Buddha Nagar	2007-08	900	850	2400	1400
	2008-09	925	950	3000	1500
	2009-10	1150	1100	2400	1600
	2010-11	1125	1050	2400	1600
Jhansi	2007-08	900	700	NA	NA
	2008-09	1050	850	NA	NA
	2009-10	1150	900	NA	NA
	2010-11	1200	1000	NA	NA
Mathura	2007-08	1180	950	740	710
	2008-09	1120	1050	915	900
	2009-10	1120	1085	970	955
	2010-11	1180	1105	1030	1000
Varanasi	2007-08	1180	950	740	710
	2008-09	1120	1050	915	900
	2009-10	1120	1085	970	955
	2010-11	1180	1105	1030	1000

3.3.12 West Bengal: The price variations noticed with respect to the jute and paddy in the selected districts of West Bengal have been tabulated as below.

Table 3.26. District wise Maximum and Minimum Price in West Bengal

Districts	Years	(Rs. Per quintal)			
		Wheat		Paddy	
		Max.	Min.	Max.	Min.
(1)	(2)	(3)	(4)	(5)	(6)
N 24 Parganas	2007-08	700	700	1150	1150
	2008-09	750	750	1600	1600
	2009-10	815	815	2200	2200
	2010-11	1160	1160	2720	2720
Murshidabad	2007-08	756	756	1100	1000
	2008-09	754	754	1400	1200
	2009-10	989	989	3100	1600
	2010-11	1030	1030	3220	2200

3.4 Roles Played by Other Agencies in MSP

Apart from the FCI, NAFED, CCI, JCI and the State level designated agencies, there are other agencies as well which are involved in the procurement of agriculture produces. The State-wise

roles of other agencies, their functions and achievements have been analyzed.

3.4.1 Andhra Pradesh: The procurement of paddy by the FCI and the AP State Civil Supplies Corporation under the MSP operations is done

with the help of Women Self Groups of IKP / DCMS / PACSs and on their own in all the paddy growing districts as per the districts allotted to them by the Commissioner of Civil Supplies. The procurements are dependent upon the availability of experienced and active SHGs / DCMS / PACSs as mutually decided by the Managing Director, A.P. State Civil Supplies Corporation Ltd., and Chief Executive Officer, SERP. Whenever necessary, the AP MARKFED is also entrusted with the procurement of paddy under MSP operations. This benefits small and marginal farmers to sell their produce at the village level and to avoid the problems and cost on transportation of paddy to AMCs. Under Ryothbandhu scheme, the farmers are allowed to store their produce at APMC godowns for selling at a future date.

3.4.2 Assam: There is no other agency involved in the procurement of Paddy or Jute.

3.4.3 Bihar: Apart from SFCs, the lowest rung at the procurement is the PACS. But there is no other agency involved in the procurement in the State.

3.4.4 Gujarat: The role of various agencies in implementation of MSP is very much limited. The prevailing Market Prices of MSP crops mainly remain above the MSP and hence agencies has limited role to play. The various agencies generally make procurements for their commercial operations. Whenever any need arises, the CCI and Gujarat State Civil Supplies Corporation play important role by timely opening of the procurement centres as per the instructions from the Government.

3.4.5 Karnataka: Apart from KFCSC, depending on the productivity, urgency and convenience of the specific area in the State, the services of other agencies namely KSCMF, KSWC, Campco, TSS, APCOS MAMCOS, TAPCMS and KOF are utilized for the procurements.

3.4.6 Madhya Pradesh: For procurement of wheat, other agency involved is Sahkari Samiti and for procurement of maize apart from MPCSC, the sahkari samitis are involved.

3.4.7 Maharashtra: The Maharashtra State Coop Growers Marketing Federation Ltd plays a vital role in implementation of MSP. The Federation is procuring Cotton on behalf of the National Agricultural Co-operative Marketing Federation (NAFED) when market prices touch the MSP level or below. The procurement centres are being opened in Zones with the help of Graders. The raw material is procured at the ginning factories. After processing full pressed bales are stored in warehouses.

3.4.8 Odisha: The NAFED, MARKFED and OTDDC are involved in procurement.

3.4.9 Rajasthan: NAFED, RAJFED and Tilam Sangh are involved in the procurement operations. RAJFED procures agricultural produce of farmers through the member societies on support price declared by the CACP and also on commercial basis. Tilam Sangh also procures oilseeds from the farmers at their doorsteps at premium price.

3.4.10 Tamil Nadu: In addition to TNCSC, the State Government has permitted Cooperative Marketing Societies and the Primary Agricultural Cooperative Credit Societies to procure paddy on behalf of the TNCSC in order to boost the procurement of paddy and help farmers in non-delta areas to get fair prices. It may be noted that during the year 2010-11, TNCSC did not permit the Primary Agricultural societies to procure on its behalf. However, the scheme was revived during 2011-12.

3.4.11 Uttar Pradesh and Uttarakhand: FCI, the nodal central agency of the GOI along with other state agencies undertakes procurement of wheat, and paddy under MSP. While FCI is

responsible for undertaking the price support for the food grains in tandem with other State agencies, the price support operations for oilseeds, pulses and coarse cereals are undertaken by NAFED which commences the procurement from the farmers directly through its cooperative network when the market rates of a particular commodity falls below or touches MSP. In Uttar Pradesh, NAFED is also involved in procurement of the wheat and paddy along with other state agencies.

3.4.12 West Bengal: Besides the Food and Supply Department which procures rice through levy system, paddy is also procured by the Custom Milled Rice Agencies (CMRA) such as NAFED, NCCF and WBECSC. The CMRAs engage Cooperative Societies at the village level. There is tripartite agreement among the CMRA, Cooperative Society and the rice mill. The cooperative societies procure paddy directly from the farmers and give it to the rice mills. The rice is delivered to the FCI or the Government depot on behalf of the CMRA.

3.4.13 Punjab: The State Food & Civil Supplies Department nominated as nodal agency for the procurement, carries out the procurement of foodgrains (wheat and paddy) at MSP. The markets and shops are also allotted by the Food and Civil Supplies Department to the authorized procurement agencies. The names of the six authorized agencies in operation in Punjab are: PUNSUP, MARKFED, PUNGRAIN, Warehousing Corporation, Punjab Agro Corporation and FCI (Central Agency).

3.5 Protection of Farmers from Market Imperfections

The farmers especially the marginal and medium farmers have weak bargaining power and due to the market imperfections they do not get their due remuneration. Appropriate government intervention is required to protect their interest.

Different states have deigned their own mechanism to protect the farmers from the market imperfections.

3.5.1 Andhra Pradesh: The farmers are protected by imparting information and awareness through training and other means. If the produce of the farmers does not satisfy FAQ norms, mechanism has been made to protect them and to ensure that there is a fixed value cut which is fixed by the Government so that the farmers get reasonable price also for their non-FAQ Paddy.

3.5.2 Bihar: To protect the farmers from market imperfection like middleman/ agent, they can sell their produce in the Panchayat itself through the Primary Agricultural Credit Societies.

3.5.3 Gujarat: The farmers are protected from the market imperfections as they are allowed to sell their produce in the Agriculture Produce Market Committees (APMCs) where they get reasonable price through the open auction method. The prices of commodities are fixed on the basis of their quality and grade. The auction is also supervised and monitored by the APMC authorities.

3.5.4 Karnataka: The farmers are trained and made aware of the MSP prices, purchase centres and specifications. A uniform value cut is fixed by the Govt. so that the farmers get reasonable price for their non-FAQ Paddy also.

3.5.5 Madhya Pradesh: To improve the position of farmers, the technology inputs are provided and input subsidy is given in order to reduce the cost of cultivation.

3.5.6 Maharashtra: The farmers sell their produce at Agriculture Produce Market Committee (APMC). In APMC, the prices are fixed based on the quality and grade and the farmers get good price through open auction method.

3.5.7 Tamil Nadu: TNCSC offers a special incentive in addition to the MSP announced by the Government. Also, the performance of TNCSC measured in terms of the quantity of paddy procured, both for the state as a whole and in the selected districts has been, on the whole, satisfactory.

3.5.8 Uttar Pradesh: Various agencies are entrusted with the task of procurement and the farmers are made aware of the price and purchase centres. The distance of the markets is reduced by opening up of enough purchase centres. In Uttarakhand also there are various purchase centres so that the distance can be reduced and maximum number of farmers avail these facilities.

CHAPTER -IV MARKET ACCESSIBILITY AND EFFECTIVENESS

The evaluation study had schedules at various levels as stated in the Instruments of Observation. The schedules were analyzed and results arrived based on the observations and replies to the selected observations. This chapter analyses the market accessibility and MSP effectiveness based on the primary data collected during the field work.

4.1 Awareness of MSP and Timeliness in their Announcement

The successful implementation of a scheme can be achieved only if the targeted population is aware of most of the aspects of a scheme. Failure to do so can never lead to an effective policy implementation. Regarding MSP, the farmers need to be aware of prevailing MSP, time of their announcements and the process of procurements, the facilities provided by the government and the payment mechanism. State-wise differences in awareness levels and lacunas in MSP announcements have been observed during the course of the study.

4.1.1 Andhra Pradesh: All the respondents were aware of MSP operation in the two selected districts of Nalgonda and Godavari. It was also observed that the pamphlets and other banners on MSP were on display. Paddy is cultivated and procured in both Rabi and Kharif seasons. The respondents were aware of MSP but none of them said that they knew about it before the sowing season. The farmers wanted that the MSP should be informed to them before the sowing season so that they can take an informed decision.

4.1.2 Assam: None of the farmers knew about MSP or time of their announcement.

4.1.3 Bihar: Majority of the sample farmers knew about the MSP in the districts Jehanabad, Munger and West Champaran and partially about the process of selling their produce at PACS. But they still were confused about the payment mechanism and the time for payments. The selected farmers and most of the people said that they got to know about MSP only after the sowing season or during the harvesting season. The authorities could not provide information regarding the date of declaration of MSP in the selected districts.

4.1.4 Gujarat: The awareness levels were found to be very low and only 33.3 per cent of the selected farmers in the districts Rajkot and Narmada were aware of MSP. Those who were aware of MSP, came to know about it only after the sowing seasons. Different districts disseminated information at different time in the reference period. The announcement time by the district authorities in very few cases was before the sowing season. It was found that declaration of MSP has not been regular or systematic (in few cases before sowing season and in most cases before harvesting season). As per the District authorities of Rajkot, MSP was declared before the sowing in the years 2007-08 and 2009-10 for Rabi crops. For the year 2008-09, the MSP was declared before the harvesting for Rabi crops. The District authorities of Narmada reported that only

in 2007-08, the MSP for Rabi crop was declared before the sowing season. The MSP for Kharif crops were declared between sowing and harvesting in both the districts.

4.1.5 Karnataka: In the district Bellary, 80 percent of the respondents knew about the MSP in the three selected villages and only 50 percent in the fourth village. In the district Mandya, 80 per cent of the selected respondents in three villages knew about MSP and in the fourth village all knew about MSP. The functionaries reported that the MSP declaration in case of Paddy is before the sowing season in both the districts.

4.1.6 Maharashtra: 75 per cent of the selected households in the district Yavatmal knew about MSP. In Latur 33 per cent were aware of MSP and 28 per cent were aware of MSP in the district Kolhapur. 77 percent in Yavatmal, 46 per cent in Latur and 27 per cent in Kolhapur said that it was declared after the sowing season. The dates of declaration of MSP in the year 2007-08 & 2010-11 were before the sowing seasons whereas the dates of declaration of MSP in the year 2008-09 & 2009-10 were before the harvesting season (except in case of sugarcane).

4.1.7 Odisha: In Khurda district, 57 per cent of the selected farmers were aware about MSP. In Mayurbhanj it was observed that in two villages more than 70 and 90 per cent were aware about MSP, however, in one village nobody knew about MSP. In another village only 20 per cent knew about MSP. In the districts Bargarh, all the respondents knew about MSP. The declaration of MSP by the State Government in the selected districts was after the sowing season but before the harvesting.

4.1.8 Rajasthan: In three selected districts of Bundi, Sri Ganganagar and Rajsamund, about 56 per cent were aware about MSP and out of them only 22 per cent knew before the sowing season and the rest knew after the sowing season. The

date of declaration of MSP has usually been during the sowing season or between the sowing and harvesting seasons (with the exception of fiscal year 2008-09 when government made some changes and declared MSP before the harvesting season).

4.1.9 Tamil Nadu: In both of the selected districts of Pudukotai and Thiravarur, all the farmers knew about MSP but they knew about MSP after the sowing season. The results of the survey indicate that in 100% of the cases, MSP rates have been made known to the beneficiaries only after the commencement of their sowing activity.

4.1.10 Uttar Pradesh: In six selected districts, all the farmers reported that they knew about MSP but none of them knew about it before the sowing season. However, it was reported by the officials that it was announced between the sowing and harvesting season during the reference period.

4.1.11 Uttarakhand: In one selected district of Haridwar, all the farmers interviewed knew about MSP, however, they knew about MSP only after the sowing season. The officials in the State told that the MSP were announced before the sowing season. However, it seems the information did not timely reach the farmers.

4.1.12 West Bengal: None of the selected farmers in the districts of Murshidabad and N24 Parganas were aware about MSP.

4.1.13 Punjab: All of the surveyed farmers were aware of MSP scheme however, 29% of them knew about MSP before the sowing season and 71% knew after the sowing season.

4.1.14 Madhya Pradesh: Out of the total sample of 80 farmers, only 27 (33.75 %) showed awareness about MSP. However, they know about only declared after the sowing season.

4.2 MSP as an Incentive Price

MSP can be rated as an incentive price only if it provides some surplus to the farmer on the sales of his produce at MSP rate. In ascertaining whether the farmer has any surplus, the cost of cultivation of that particular commodity needs to be computed and compared with the selling price (that is, the MSP) to see whether the farmer are left with any surplus.

4.2.1 Andhra Pradesh: Informants under all categories were of the view that the scheme of MSP should be continued in future to protect the farmers from the exploitive practices. In addition to this, the knowledgeable persons interviewed were of the view that this scheme helps in improving the buffer stock of the food grain.

4.2.2 Assam and West Bengal: Whether MSP could work as an incentive price could not be ascertained as none of the farmers interviewed in these two States knew about MSP.

4.2.3 Bihar: Before the implementation of procurement via PACS in the reference period, none of the farmers interviewed had ever sold their produce to the government procuring agencies. However, since 2011-12 the farmers because they are getting the benefit of MSP, they were found to be planning for the next season and they wanted to improve the productivity so that maximum benefits can be availed. So from the year of the survey, the farmers were of the view that MSP should be continued.

4.2.4 Gujarat: All the selected households, traders, and knowledgeable persons and agencies officials in the district Rajkot wanted MSP to continue as it is an incentive price for the farmers. Whereas in the district Narmada, only 72.5 per cent of the households agreed that MSP should continue as it provides remunerative prices.

4.2.5 Karnataka: 90% of the household respondents of one selected village, 80% each of 3 sample villages, 70% each of two sample villages, 40% respondents of one village and 30% sample respondents of one village wanted MSP to continue since according to them the MSP prevents local price from falling too low by ensuring a minimum price. All the government officials and knowledgeable persons reported that the MSP should be continued citing the reason that farmers are assured of market with minimum price they can get for their produce.

4.2.6 Maharashtra: All the respondents covering traders, agency officials, knowledgeable persons, and government officials agreed that MSP should continue. However, only 56 percent of the farm households wanted MSP to continue as an incentive price. The reason for continuance was cited as it gives ensured price and protection to the farmers from the commission agents/middlemen.

4.2.7 Odisha: All the respondents at different levels like Agency, Government officials, knowledgeable persons, and households replied that they want MSP to be continued. The reason cited for this was that the farmers are saved from exploitation and they get good return on their produce. Also according to them, the productivity of farm also gets increased and there is increased use of pesticides and fertilizers.

4.2.8 Tamil Nadu: As informed by the various respondents (government functionaries, beneficiaries, traders and knowledgeable persons), MSP plays a critical role in stabilizing the market prices. According to them, MSP rates are better than market prices in some areas and definitely acts as a floor rate -prices offered by the private dealers does not fall below the MSP. Accordingly, all of them advocated for the continuance of MSP.

4.2.9 Uttar Pradesh: The respondents in selected villages canvassed are in favour of the continuation of MSP which indicates that in spite of all the lacunae in the process of implementation, people on the whole have benefitted from the MSP policy. The reason stated by them was that MSP ensured income security to the farmers.

4.2.10 Uttarakhand: All the respondents at different levels said that the MSP should continue as it ensures marketability of the farmers produce. It also ensures better remunerative price to the farmers in the open market. The government officials at the village level said that MSP ensures marketability of the farm produces.

4.2.11 Rajasthan: Respondents under all the categories (Agencies, Government officials at village level, Traders, Knowledgeable Persons & Farm Households) were of the view that the scheme of MSP must be continued in order to provide remunerative prices to the farmers, protect them from middlemen and upgrade the living standard of farmers.

4.2.12 Punjab: All farm households, agencies and knowledgeable persons opined that the MSP as an incentive price should be continued as it ensures at least basic minimum support price to the produce of the farmers; protects the farmers from the monopoly of the traders/commission agents; prevents distressed selling and also ensures food security of the nation through buffer stocks of food grains.

4.3 Payments, Underweight and Distress Selling

The procurement operations by the government should be timely and fool proof mechanism needs to be in place so that the farmers do not face the problems of under weighing, delayed payments or distress selling for their immediate financial requirements. The study revealed the following:

4.3.1 Bihar: The farmers were involved in distress selling prior to the system of procurement by PACS. In the selected district of Munger, the data analysis showed that 9 out of 40 sold their produce at MSP and rest in the open market. The probable reasons assigned were immediate need for cash, uncertainty about the procurement of food grains at MSP and lack of knowledge. In Jehanabad district, almost 45 per cent of farmers sold their food grains in the open market and 55 per cent sold at MSP. In West Champaran district, only two out of the forty respondents sold their produce in the open market. Some of the selected farmers could not sell their produce at MSP as the centres were far away and middlemen were involved. The payment to the farmers were made in the survey period was through crossed cheques. Regarding the underweighting, the respondents told that all the farmers had to give five kg extra per quintal on account of the higher moisture content during the survey period.

4.3.2 Gujarat: Out of the total respondents, only 12.5 % sold their crops under MSP whereas 65% have sold their produce in the open market. However, 22.5 % of them has not sold their produce. 83.87 per cent of them opted for cash payment whereas 16.13% received payments through cheques for their produce sold under MSP. About the time lag between the sale and payments, 52 % reported on the spot payments, 1.5 % reported within 2-3 days, 31% reported within a week and 16% reported over 1 month time. 34% of the respondents selling their produce under MSP reported fairness of the weight, availability of grading and fairness of grading system.

4.3.3 Assam and West Bengal: Assessments of payments, underweight and distress selling under MSP could not be ascertained in these two States as none of the farmers selected for the study, were aware of MSP Policy, and thus, they none of them could sell their produces at MSP.

4.3.4 Maharashtra: Out of 120 households, 28.33 % sold their crop under the MSP whereas 67.50% sold their crops in the open market, and the remaining 14.17% neither sold their crop under MSP nor in the open market. In case of mode of payment, 61.67% has opted for cash payment while 2.50% opted through cheques and the remaining 19.47% opted for deposited in bank A/C. As far as time lag between the sale and payment is concerned, 41.67% reported on the spot, 14.16% reported within 2-3 days, 9.17% reported within a week, 18.33% reported within 1 month and 1.67% reported over a month. 82.50% of the households reported fairness in weighment while 78.33% and 68.33% households reported availability of grading system and fairness about grading system respectively.

4.3.5 Karnataka: None of the selected farm households sold their produce under MSP. All the sample farmers have sold their produce in the open market/brokers. In open market selling, 98 per cent of the farm households have reported that they got their payment on the spot, 1 per cent within 2-3 days and another 1 per cent within a month after selling. During selling operations, 74 per cent of the farm households have reported that the weighment was fair, 65 per cent of the farm households have reported that grading system is available and all of them who have reported in the affirmative have opined that the grading system is fair. It is interesting to note that none of the farm households have reported that brokers are active in the procurement under distress sales.

4.3.6 Punjab: 100% of the households sold their produce at MSP and none of them sold in the open market. 52.5% farmers received payment in cash and 47.5% in cheques. 25% of them received on the spot payments, and the rest got delayed payment. However, all payments were made to the farmers within a period of one month. 93.8% of the farmers reported fairness of the weighing system in MSP.

4.3.7 Odisha: Out of the 40 selected farmers, only 8 were able to sell at MSP and rest sold either in the open market or kept it for their self-consumption. The ones who sold in the open market got on the spot payment and rest got it through the account payee cheques. Some farmers got their cheque payments even after one month. However, none of the farmers reported any problems with the weighment system.

4.3.8 Uttar Pradesh: It is observed that 28% of the farmers sold their grains under MSP, 63% sold their grains in the open market and the remaining 8% kept for their self consumption. 70% of farmers received their payments in the form of cash. Finally, it has also been observed during the course of study that 82% of the farmers reported to have faced various limitations in selling their food grains/crops at MSP.

4.3.9 Uttarakhand: All the farmers sold their produce under MSP. 80 per cent of the respondents got their payments after a month. However, there were no issues regarding the weighing system and grading at the purchase centres.

4.3.10 Tamil Nadu: All the respondent farmers told that the cash payment is made within 2-3 days of the sales. All of them have not reported any instances of under-weighment. It is further reported by the farmers that there is fair grading system and on no occasion they faced any limitations in selling their produce under MSP. Also, there is no involvement of the brokers in the procurement operation through the distress sales.

4.3.11 West Bengal: All the farmers sold their produce in the open market.

4.4 Constraints in MSP faced by the Beneficiaries

In the process of selling at the MSP, the farmers faced various constraints which need to be done away with for smooth functioning of the

system and to protect the interest of the farmers. Some of the constraints faced were nationwide and some constraints were State specific as listed below:

4.4.1 Andhra Pradesh: The farmers had to undergo additional hardships because of a long wait and long queue at the market yards during the peak season which sometimes prolonged to even more than a week, thus causing great inconvenience to the farmers. There were also insufficient infrastructural facilities at the agricultural marketing yards like tarpaulins, faulty moisture meters, deficient drying platform, etc. Also, the market commission and fees were high in Andhra Pradesh as compared to other leading rice producing States.

4.4.2 Assam: The procurement of jute has been a major problem due to very few procurement centres available in a district. Many of the farmers were not aware of the rating system and resultantly, they had to wait for some days for their turn. The farmers also believed that the JCI prefers brokers for the purchase of jute and during the peak sale season, the centres remain closed.

4.4.3 Bihar: There was a lack of trained staff and the number of staff was also insufficient in addition to the insufficient infrastructure facilities at the centres. There was also lack of coordination among the implementing agencies. There was shortage of millers in the State which led to the congestion and hence delays. The warehousing capacity of the Government both at the district and State level was insufficient and so the food grains got destroyed/affected sometimes. Other drawbacks include the lack of awareness about MSP among the farmers. The quantity, price, specifications and the mode of payment were unknown to many of them and hence farmers are skeptical about selling their all produces to PACS.

4.4.4 Gujarat: There was little MSP set up at District or Block level and the farmers of remote and far-flung areas are not aware of MSP scheme. MSP declared was not known to the farmers well in advance. The Procurement centres were not opened timely and the authorities insisted for the revenue records. The Procurement centres were at faraway places so the farmers has to face the problem of transportation cost.

4.4.5 Karnataka: Procurement of produces under MSP started very late and there was insufficient storage space for keeping the produce, adding to the hardship of farmers which led to more open market sales at a price lower than MSP. The Procurement Centres were away from the villages and were situated normally at Block / Taluka level thus resulting into the inconvenience to the farmers in addition to the transportation cost. After this, if the produce was rejected at the procurement centres due to the quality being inferior to what was prescribed for FAQ, it further compounded the problem/hardship for the farmers.

4.4.6 Madhya Pradesh: The constraints noticed were: no MSP set up at District or Block level, farmers of remote and far-flung areas unaware of MSP scheme, lack of knowledge of calculation of cost, MSP information not reaching farmers well in advance, procurement centers not opening timely, procurements Centers insisting for revenue records, procurement centers at faraway places, no easy/cheap transport to reach centers, etc.

4.4.7 Odisha: The locations of procurement centers were located far away and the transportation charges were high. There was lack of awareness among the farmers about MSP. Due to the extreme poverty, the small and marginal farmers were forced to sell their surplus paddy to the brokers or middleman even at a lesser price than MSP. There was delays in encashment of cheques by the Rural Banks. There was lack of adequate infrastructure like storage facilities,

inadequate watch and ward, and inadequate staff and instruments. The MSP fixed by the Government of India was less when compared to the increased cost of agricultural inputs such as increased cost of labour, fertilizer, pesticides, manure, etc. Inadequate provision of training to Farm Household for quality control measures hinders the farmers to produce FAQ variety of Paddy.

4.4.8 Punjab: The constraints faced were that MSP was not up to the farmers' expected price; MSP made known to the beneficiaries only after the commencement of their sowing activities; produce valued less than the expected rate due to the moisture factor; quantity of subsidized inputs not enough to meet the demand of all farmers; long queues at the time of procurement and the produce stored in the open because of lack of covered storage facility get soaked due to sudden rains. The farmers told that they have to incur lot of expenditure for boring/re-boring of tube wells due to depletion of the water table in the State.

4.4.9 Rajasthan: The Procurement Centres don't become operational on time and the distance of procurement centre was significant and there was lack of transportation facilities. There was also unavailability of sufficient number of gunny bags (packaging material). The lifting of produce from the Mandi yards was often delayed by agencies. There was lack of awareness about MSP among the farmers. Since the MSP payment through cheques takes time, the farmers out of their economic compulsions sell their produce to the traders who pay them on the spot.

4.4.10 Tamil Nadu: MSP rates have been made known to the beneficiaries only after the commencement of the sowing activity because of which farmers are unable to take informed decisions on cropping. The produce is valued less than the expected rate due to the moisture factor

and in the non-delta area it is wholly rejected. Long queues were formed at the time of procurements and during sudden rains their produce which is stored in the open because of lack of covered storage facility, get soaked. As reported by some respondents, in some places, the DPC is located at a distance of 5-7 km.³ Shortage of funds in some DPCs leading to delays in payments; lack of adequate infrastructural facilities like godowns, drying yards, electronic weighing equipment, etc. were cited as other constraints.

4.4.11 Uttar Pradesh: MSP rates were made known to the beneficiaries only after the commencement of the sowing activity because of which farmers were unable to take informed decisions on cropping. Unavailability of instant cash at MSP led to delays in payment via cheques, hence, the small and marginal farmers preferred to sell to the traders who made on the spot payments. It has been observed that the jute bags are sometimes not available at the purchasing centres due to the poor implementation of MSP.

4.4.12 Uttarakhand: The problems and the constraints encountered by the beneficiaries are: the lack of awareness about MSP, inefficient functioning of the State machinery like unavailability of jute bags required for storage of crops and delays in payment to the farmers who are paid through cheques as a result of which farmers prefer to sell their crops to the traders in the open market at a price below MSP.

4.4.13 Maharashtra: The constraints faced were: MSP is not fixed based on the current cost of cultivation; no operational agency in the village and no initiative of the State Agriculture Department.

3. Though the number of DPCs in Tamil Nadu have been increasing during the reference period, yet the concentration of DPCs in the State seems to be skewed in favour of the Delta region, and to that effect, paddy procurement in other regions, (Eg., Pudukottai which is a non-Delta district) get neglected.

4.4.14 West Bengal: The farmers did not sell under MSP as there were no procurement centres opened for this purpose in the State.

CHAPTER - V IMPACT OF MINIMUM SUPPORT PRICE

5.1 Impact on Cropping Pattern

From the data and information collected, the efforts were made to analyze the impact of MSP on the cropping patterns in the sample districts of

West Godavari and Nalgonda and their selected areas. The results are as below:

5.1.1 Andhra Pradesh: It can be seen from the table below that in case of both the selected districts the Net Cropped Area in case of paddy and percentage of irrigated area to net crop area has increased considerably during 2007-08 to 2010-11.

Table 5.1. Impact on Cropping of Paddy in selected districts of AP

(Land/Area in Hectares)

Districts	Items	2007-08	2010-11
(1)	(2)	(3)	(4)
West Godavari	1) Gross cropped area	706622	667376
	2) Net Cropped area	438132	439756
	3) Leased/Rented	NA	NA
	4) Total irrigated area	290424	314109
	5) Area cropped more than once in a year	268490	227620
	6) Fallow land	29230	20915
	7) Share of irrigated area to net cropped area	66%	71%
Nalgonda	1) Gross cropped area	613207	711439
	2) Net Cropped area	511089	562410
	3) Leased/Rented	---	---
	4) Total irrigated area	387065	478240
	5) Area cropped more than once in a year	153861	198357
	6) Fallow land	489550	427574

Table 5.2. Area as Percentage to Gross Cropped Area (GCA) in Andhra Pradesh

State /Districts	Crop Names	2007-08	2010-11
(1)	(2)	(3)	(4)
West Godavari	Paddy	63.02	68.40
	Maize	5.08	6.69
	Pulses	1.87	1.63
	Coconut	3.15	3.06
	Sugar Cane	8.90	7.91
	Cotton	0.64	0.59
Nalgonda	Paddy	50.67	56.97
	Maize	0.57	0.26
	Pulses	14.30	12.09
	Coconut	-	-
	Sugar Cane	0.14	0.13
	Cotton	17.32	23.21

The comparison in respect of cropping pattern has been done for 2007-08 and 2010-11. It can be seen from the table below that the area of crop as percentage of Gross Cropped Area has increased considerably in the case of paddy in both the sample districts of West Godavari and Nalgonda. In case of maize, it has marginally increased in West Godavari. In case of cotton, Nalgonda had a good increase in area cropped whereas in case of West Godavari, the area under cotton as percent to the Gross Cropped Area has fallen down

marginally.

5.1.2 Assam: The impact at the State level and the selected districts can be seen in the following table. It can be seen that the Net Cropped Area has increased in 2009-10. The area cropped more than once in a year also increased. The percentage of irrigated area to the net cropped area increased from 23 per cent in 2007-08 to 27 per cent in 2009-10. (Land/Area in Hectares)

Table 5.3. Impact on the Cropping Pattern in selected district of Assam

Name of the State: Assam

Items	2007-08	2009-10*
(1)	(2)	(3)
1) Gross cropped area	3839000	4099000
2) Net Cropped area	2324000	2571000
3) Leased/Rented	NA	NA
4) Total irrigated area	631000	772000
5) Area cropped more than once in a year	1086000	1289000
6) Fallow land	186000	128000
7) Share of irrigated area to net cropped area	23%	27%

* Information for 2010-11 is not available since it was yet not finalized

Name of the District/State: Dhubri/ Assam

Items	2007-08	2010-11
(1)	(2)	(3)
1) Gross cropped area	135103	160137
2) Net Cropped area	130034	130034
3) Leased/Rented	NA	NA
4) Total irrigated area	48405	58860
5) Area cropped more than once in a year	95045	111829
6) Fallow land	7560	6279
7) Share of irrigated area to net cropped area	37.22%	45.26%

Name of the Block/District/State: Rupasi/ Dhubri/ Assam

Items	2007-08	2010-11
(1)	(2)	(3)
1) Gross cropped area	-	-
2) Net Cropped area	12437.5	12437.5
3) Leased/Rented	NA	NA
4) Total irrigated area	7879	8029
5) Area cropped more than once in a year	9357	9664
6) Fallow land	421	366
7) Share of irrigated area to net cropped area	63%	65%

(contd.)

Table 5.3. (Concl.)

Name of the District/State: Goalpara/ Assam

Items	2007-08	2010-11
(1)	(2)	(3)
1) Gross cropped area	128830	158208
2) Net Cropped area	100011	98788
3) Leased/Rented		
4) Total irrigated area	8502	11953
5) Area cropped more than once in a year	49567	50790
6) Fallow land	8549	7326
7) Share of irrigated area to net cropped area	8.5%	12.1%

5.1.3 Bihar: In the district of Munger, there was an increase in the net cropped area from 44436 hectares in 2007-08 to 68600 hectares in 2010-11. The information collected and analyzed has been tabulated as below:

Table 5.4. Impact on the Cropping Pattern in selected district of Bihar

(Land/Area in Hectares)				
Items	2007-08	2010-11	2007-08	2010-11
(1)	(2)	(3)	(4)	(5)
	Munger		West Champaran	
1) Gross cropped area	70270	75750	286761	288602
2) Net Cropped area	44436	68600	266761	302102
3) Leased/Rented				
4) Total irrigated area	32455	40381.08		
5) Area cropped more than once in a year	5750	8550	109051	125007
6) Fallow land	1278	948		53000
7) Share of irrigated area to net cropped area				
	Jehanabad			
1) Gross cropped area				
2) Net Cropped area	83110	88370		
3) Leased/Rented				
4) Total irrigated area				
5) Area cropped more than once in a year	19.85			
6) Fallow land	9036			
7) Share of irrigated area to net cropped area	48.48	53.46		

The impact on the cropping pattern in the three selected districts of Bihar can be seen in the following table:

Table 5.5. Impact on Cropping Pattern in three Districts in Bihar

(Land/Area in Hectares)						
Name of the Crops	2007-08	2010-11	2007-08	2010-11	2007-08	2010-11
(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Jehanabad		West Champaran		Munger	
Paddy	59797	66000	150000	171000	32930	35000
wheat	20714	28000	87500	82000		
Maize	420	600	10975	11000	10250	11000
Kharif pulse	315	1440	21975	7980	3300	3700
Kharif oilseeds	263	600	16145	16152	1790	2050
Rabi pulse	11052	15800				
Rabi oilseeds	638	1962				
Barley			150	40		
Boro Rice			16	430		
Wheat					22000	24000

5.1.4 Gujarat: It was reported by the concerned authorities that the land use pattern and the cropping pattern has no impact of MSP as the price of various commodities generally remains above the MSP. The land use and the cropping pattern is decided by the farmers on their own keeping in mind the return from the surplus produce. The Gujarati farmers are mainly interested in commercial /cash crops which fetch them good returns as compared to the food crops.

However, there was a marginal increase in the net cropped area from the year 2007-08 to 2010-11. However, the irrigated area to the net cropped area increased from 44.3 per cent to 53.86 per cent during the same period in the State. Land use statistics indicates that the Gross cropped area, Net Cropped area, irrigated area and area sown more than once has increased in 2010-11. There is also declined in fallow land in 2010-11 when compared with 2007-08.

Table 5.6. Impact on the Cropping Pattern in selected district of Gujarat:

(Land/Area in Hectares)		
Items	2007-08	2010-11
(1)	(2)	(3)
1) Gross cropped area	5643800	6723800
2) Net Cropped area	9647000	9801000
3) Leased/Rented	NA	NA
4) Total irrigated area	4279000	5279000
5) Area cropped more than once in a year	1510000	2006000
6) Fallow land	2607000	2595000
7) Share of irrigated area to net cropped area	44.35	53.86

5.1.5 Karnataka: There is increase in the Gross cropped area by 3.05 per cent, net cropped are by 3.11 per cent, total irrigated area by 3.05 per cent, area cropped more than once by 3.05 per cent and

percentage of irrigated area to net cropped area by 15.70 per cent during the period from 2007-08 to 2010-11.

Table 5.7. Impact on land use in Karnataka State

(Land/Area in Hect)		
Items	2007-08	2010-11
(1)	(2)	(3)
1) Gross cropped area	11145000	11485000
2) Net Cropped area	90006275	92810280
3) Leased/Rented	Not Available	Not Available
4) Total irrigated area	3789000	3904590
5) Area cropped more than once in a year	2138725	2203972
6) Fallow land	1767000	1801000
7) Share of irrigated area to net cropped area	36.36	42.07

The Cropping Pattern of Karnataka that there was decline in the Gross cropped area (GCA) of the traditional crops of Ragi (from 7.47% to 6.86% of GCA) and Jowar (12.4% to 10.81% of GCA), the staple food of Karnataka during the year 2010-11 as compared to that of the year 2007-08. During the same period, Paddy and

Maize coverage have shown an increase from 12.7% to 13.4% and from 9.98% to 11.2% of GCA, respectively.

5.1.6 Punjab: The table below shows the impact of MSP on the land use in Punjab and its districts selected as sample for the study.

Table 5.8. Impact on Land Use in Punjab and its Selected Districts

(Area in ha.)				
Items	2007-08	2010-11	2007-08	2010-11
(1)	(2)	(3)	(4)	(5)
	Punjab State		District Amritsar	
1) Gross cropped area	7869000	7875000	426000	427000
2) Net Cropped area	4174000	4158000	222000	217000
3) Leased/Rented	0	0	0	0
4) Total irrigated area	7688000	7714000	222000	217000
5) Area cropped more than once in a year	3695000	3717000	204000	209000
6) Fallow land	42000	40000	400	400
7) % of irrigated area to net cropped area	97.7	98	99.7	99.7
	Dist. Fatehgarh Sahib		Block Chogawan (Dist. Amritsar)	
1) Gross cropped area	192981	192409	68486	68486
2) Net Cropped area	97400	97196	34043	34243
3) Leased/Rented	NA	NA	NA	NA
4) Total irrigated area	97400	97196	34043	34243
5) Area cropped more than once in a year	95581	95213	32000	32000
6) Fallow land	Nil	Nil	102	102
7) % of irrigated area to net cropped area	192981	192409	100	100

(contd.)

Table 5.8. (concl.)

Items	2007-08	2010-11	2007-08	2010-11
(1)	(2)	(3)	(4)	(5)
	Block Jandiala Guru, Dist. Amritsar		Block Amloh, Dist.F.G.Sahib	
1) Gross cropped area	48148	47671	43214	42510
2) Net Cropped area	24000	24000	21736	21562
3) Leased/Rented	NA	NA	NA	NA
4) Total irrigated area	24000	24000	21736	21562
5) Area cropped more than once in a year	20000	20000	21478	20948
6) Fallow land	NA	NA	NIL	NIL
7) % of irrigated area to net cropped area	100	100	100	100
	Block Khammano, Distt. F.G.Sahib			
1) Gross cropped area	33114	33378		
2) Net Cropped area	16905	16868		
3) Leased/Rented	Nil	Nil		
4) Total irrigated area	16905	16868		
5) Area cropped more than once in a year	16509	16415		
6) Fallow land	396	837		
7) % of irrigated area to net cropped area	100	100		

5.1.7 Madhya Pradesh: The table below shows Madhya Pradesh and its 4 districts selected as the impact of MSP on the land use in the State of sample for the study.

Table 5.9. Impact on Land Use in Madhya Pradesh and its 4 Selected Districts

(Area in ha.)

Items	2007-08	2010-11	2007-08	2010-11
(1)	(2)	(3)	(4)	(5)
	Chhindwara		Dhar	
1) Gross cropped area	625976	655692	78473	79700
2) Net Cropped area	487017	489571	76119	77309
3) Leased/Rented	0	0	0	0
4) Total irrigated area	151644	155217	42153	50400
5) Area cropped more than once in a year	138959	166121	22075	24739
6) Fallow land	68829	61564	433	371
7) % of irrigated area to net cropped area	31.14	31.70	55.38	65.19
	Shajapur		Burhanpur	
1) Gross cropped area	679993	741036	95520	107585
2) Net Cropped area	453308	454327	85655	104049
3) Leased/Rented	0	0	0	0
4) Total irrigated area	163035	251106	38490	50220
5) Area cropped more than once in a year	226685	286709	6320	8500
6) Fallow land	2634	1961	2063	1832
7) % of irrigated area to net cropped area	35.97	55.27	44.94	48.27

There is a minor variation in the cropping pattern in the four districts selected as sample. There is decrease in the percentage of GCA in wheat in 2010-11 as compared to 2007-08, but at the same time there is minor increase in the gross cropped area for grams and soya bean and substantial increase in the gross cropped area of Maize as tabulated below.

Table 5.10. Percentage to Gross Cropped Area in the sampled Districts of MP

(Area as % to Gross Cropped Area)

Crops	2007-08	2010-11	2007-08	2010-11
(1)	(2)	(3)	(4)	(5)
		Chhindwara	Dhar	
Wheat	17.69	17.46	10.64	8.17
Maize	14.72	14.39	0.93	2.16
Grame	5.51	6.60	4.07	4.53
Soyabean	23.10	24.65	3.03	3.29
Cotton			1.50	1.66
		Shajapur	Burhanpur	
Wheat	12.87	11.82	11.57	10.39
Maize	6.13	5.36	2.93	8.83
Grame	19.46	20.84	3.98	4.60
Soyabean	48.74	45.96	31.93	16.27
Cotton	35.0	51.27		
Jowar	3.38	2.50		

5.1.8 Maharashtra: The impact on the cropping pattern has been tabulated below.

Table 5.11. Statement showing Impact on the Cropping Pattern in Maharashtra

(Land/Area in Hac.)

Items	2007-08	2010-11	2007-08	2010-11
(1)	(2)	(3)	(4)	(5)
		Maharashtra State	Dist.: Yavatmal	
1) Gross cropped area	226553000	226120000	1254730	1012413
2) Net Cropped area	17472700	17400700	1103362	893960
3) Leased/Rented			---	---
4) Total irrigated area	3311000	3321000	112669	106379
5) Area cropped more than once in a year	5182600	5211300	151368	118453
6) Fallow land	3430400	3479300	25832	34809
7) % of irrigated area to net cropped area	18.95	19.10	10.21	11.90
		Dist.: Kolhapur	Dist.: Latur	
1) Gross cropped area	436015	431308	817400	670800
2) Net Cropped area	389727	391404	630700	527400
3) Leased/Rented	---	---	---	---
4) Total irrigated area	132100	157100	61058	123552
5) Area cropped more than once in a year	46288	39904	186700	143700
6) Fallow land	24981	24232	47000	59991
7) % of irrigated area to net cropped area	33.89	40.14	9.68	23.92

*Data for 2009-10

Further, it can be seen from the table below that the area under Tur and Jowar has increased in Yavatmal and Latur Districts whereas the area under Gram has declined in Yavatmal district.

The area under Paddy and Groundnut has also declined in Kolhapur district while the area under Sugar has increased marginally.

Table 5.12. Impact on the Cropping Pattern in Maharashtra

(Area as % to Gross Cropped Area)

Crops	Maharashtra		Yavatmal		Kolhapur		Latur	
	2007-08	2010-11	2007-08	2010-11	2007-08	2010-11	2007-08	2010-11
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1) Cotton	1.41	1.50	48.58	48.38	--	--	--	--
2) Tur	0.51	0.58	8.95	12.07	--	--	10.47	13.86
3) Soya bean	1.18	1.21	21.51	18.5	12.91	11.11	22.16	28.55
4) Jowar	1.79	1.85	6.70	6.99	--	--	17.98	18.74
5) Wheat	0.55	0.48	3.60	5.86	--	--	--	--
6) Gram	--	--	8.36	5.81	--	--	7.78	9.75
7) Paddy	0.67	0.65	--	--	25.46	23.65	--	--
6) Sugarcane	0.48	0.33	--	--	26.38	32.46	--	--
7) Groundnut	--	--	--	--	12.71	11.64	--	--

5.1.9 Odisha: The land use and the cropping pattern can be seen in the following table:

Table 5.13. Impact on Cropping Pattern in Paddy in Odisha

(Area in acres)

Items	2007-08	2010-11	2007-08	2010-11
(1)	(2)	(3)	(4)	(5)
	Odisha State		District: Khurda	
Gross cropped area	90158200	90797200	206316	201860
Net Cropped area	5624000	5421000	132108	123813
Leased/Rented	NA	NA	NA	NA
Total irrigated area	2027000	2085000	54994	51328
Area cropped > once in a year	3392000	3759000	1223	779
Fallow land	556000	759000	170	1639
Share of irrigated area to NCA	37.37%	38.46%	41.60%	41.50%
	District: Mayurbhanj		District: Bargarh	
Gross cropped area	NA	NA	NA	NA
Net Cropped area	389000	398045	201766	200450
Leased/Rented			NA	NA
Total irrigated area	102690	111915	129745	133900
Area cropped > once in a year	NA	NA	NA	NA
Fallow land	48000	38955	NA	
Share of irrigated area to NCA	26.39%	28.11	64.3%	66.8%

It can be seen in the table above that there is a marginal fall in the net cropped area for paddy in 2010-11 as compared to 2007-08 and the percentage of irrigated area has also increased marginally.

5.1.10 Rajasthan: The change in the cropping pattern in area (in lakh hac.) was from 25.92 to 30.36 in Wheat, 24.58 to 24.9 in Mustard; 51.08 to 55.19 in Bajra; 10.55 to 11.47 in Maize and from 3.69 to 3.36 in the case of Cotton.

Table 5.14. Impact on Cropping Pattern in Rajasthan

(Area in ha.)					
Items	Year	Rajasthan	Bundi	Rajsamand	Sri Ganganagar
(1)	(2)	(3)	(4)	(5)	(6)
Gross cropped area	2007-08	22208291	403236	147155	886078
	2010-11		443917	143468	1023843
Net Cropped area	2007-08	17095672	254016	97731	886078
	2010-11	16974485	261376	90239	1023843
Leased/Rented	2007-08	-	-	-	-
	2010-11	-	-	-	-
Total irrigated area	2007-08	8088455	200727	49830	792468
	2010-11	5849914	203696	45307	792468
Area cropped more than once in a year	2007-08	5112619	149220	53070	-
	2010-11	4770392	182541	53229	-
Fallow land	2007-08	3891287	42563	145119	-
	2010-11	4102834	35030	145278	-
Share of irrigated area to NCA	2007-08	47.31%	79.02%	50.98%	91.64%
	2010-11	34.46%	77.93%	50.2%	88.51%
8) Cropping Intensity	2007-08	-	158.74%	150.57%	100%
	2010-11	-	169.83%	158.98%	100%

5.1.11 Tamil Nadu: The change in cropping pattern in the State was as below.

Table 5.15. State level impact on land use (crop-wise) in Tamil Nadu

(Area as % of GCA)				
Crops	2007-08	2010-11	2007-08	2010-11
(1)	(2)	(3)	(4)	(5)
Tamil Nadu				
Paddy	30.77	33.13	58.08	61.81
Black Gram	5.29	5.29	0.51	0.56
Green Gram	2.73	2.98	0	0
Ground Nut	11.34	6.70	15.46	10.95
Thiruvavur				
Paddy	60.97	62.42		
Black Gram	20.79	21.50		
Green Gram	12.87	14.4		
Ground Nut	3.04	0.78		

5.1.12 Uttar Pradesh: It was noticed that the Gross cropped area and Net cropped area in the State of Uttar Pradesh have witnessed a marginal increase of 1.4 per cent and 1.1 per cent respectively over the period 2007-08 and 2010-11. Similarly, there has also been an increase in net irrigated area and percentage of irrigated area to

net cropped area by 2.7 per and 1.3 per cent, respectively. The increase in irrigated area is indicative of expansion of irrigation facilities in the state and will reduce the dependency on monsoons in the long run. The impact of land use pattern in Uttar Pradesh can be seen in the following table:

Table 5.16. Statement showing Impact on the Cropping Pattern in UP

(Area in ha.)		
Items	2007-08	2010-11
(1)	(2)	(3)
1) Gross cropped area	25320137	25677000
2) Net Cropped area	16416732	16593000
3) Leased/Rented	NA	NA
4) Total irrigated area	13085000	13440000
5) Area cropped more than once in a year	8903000	9022000
6) Fallow land	1947633	1753000
7) % of irrigated area to net cropped area	79.70	80.99

Further, the crop-wise impact on their pattern table. in the State has also been captured in the following

Table 5.17. Area as Percent to the Gross Cropped Area in UP

Name of Crops	2007-08	2010-11	2007-08	2010-11	2007-08	2010-11
(1)	(2)	(3)	(4)	(4)	(5)	(6)
Uttar Pradesh		Dist.: Etawah		Dist.: Faizabad		
Wheat	37	38	22	21	32	40
Paddy	23	22	43	44	35	45
Sugarcane			0.3	0.2	8	8
Dist.: G.B. Nagar		Dist.: Jhansi		Dist.: Mathura		
Wheat	27	26	NA	NA	12	14
Paddy	59	62	33	40	57	57
Sugarcane	3	2	NA	NA	0.01	0.01
Dist.: Varanasi						
Wheat	35	30				
Paddy	47	50				
Sugarcane	3	3				

5.1.13 Uttarakhand: The State has witnessed a fall in both Gross and Net cropped area by approximately 15% and 4% respectively between the period from 2007-08 and 201011. While the net irrigated area has witnessed a decrease of 1.4%, the increase of irrigated area to the net

cropped area was 4% over the reference period. The reduction in the irrigated area in Uttarakhand may be attributed to the hilly terrain in the State which acts as a barrier to the expansion of irrigation facilities on account of higher cost.

Table 5.18. Impact on the Cropping Pattern in Uttarakhand

Items	(Area in ha.)	
	2007-08	2010-11
(1)	(2)	(3)
1) Gross cropped area	1187409	1169697
2) Net Cropped area	755035	723164
3) Leased/Rented	NA	NA
4) Total irrigated area	340925	336136
5) Area cropped more than once in a year	432374	446533
6) Fallow land	107627	127793
7) % of irrigated area to net cropped area	14	18

Further, it was also found that the use of land for the cultivation of wheat and paddy had increased marginally from 31% to 32% and from 22% to 23% respectively in the State during the period from 2007-08 to 2010-11.

5.2 Change in Adoption of Technology due to MSP

The change in technology is a continuous process and from the traditional methods of farming to the modern methods has come into practice. However, the change can be attributed to MSP or not, has been analyzed from the qualitative data collected during the field work. The responses of the sampled farmers have been compiled to find out the role played by MSP in encouraging the farmers to adopt the modern farming technologies.

5.2.1 Andhra Pradesh: The farming inputs that have changed over the years are: viz., manure use, fertilizer use and the method of transportation. It is understood that the above changes in adoption of technology has taken place not only because of the effects of MSP but also due to the awareness created among the farmers community by media and publicity by the government.

5.2.2 Assam and West Bengal: The question is irrelevant as MSP is not properly implemented in Assam and West Bengal. Further, none of the sample farmers who were interviewed by study team knew about the MSP or their announcement.

5.2.3 Bihar: In Munger district, the use of fertilizers increased by 40 percent and use of pesticides by 37.5 percent. The reason cited for these increases was that during the course of cropping they get to know about MSP and it affects their use on crops. In the district Jehanabad, 50 percent of the respondents say that MSP partially affects the use of fertilizer on crops. The use of pesticides gets partially affected as told by 32.5 per cent, however, 35 percent of the respondents told that MSP has no impact.

About the impact on cultivation practices, 52.5 per cent of the respondents said that the MSP rarely affects and 32.5 per cent said that there is no impact. In the district West Champaran, 67.5 per cent of respondents said that the use of pesticides partially gets affected because of MSP/FRP and almost 30 per cent said that it gets affected rarely.

5.2.4 Gujarat: The responses from the authorities at State, District, Block and Village level indicate that MSP has not affected the adoption of technology or improved the farming practices, however, the farmers by their own experiences and circumstances adopted different methods of farming.

5.2.5 Karnataka: The State authorities stated that there are definite effects of MSP on change in adoption of farming technologies such as seed variety, method of ploughing, increased manure use, increased fertilizers use, increased pesticides

use, transformed method of harvesting, different method of transport, etc. However, it is interesting to note that the authorities at the sample district have opined that these changes are not due to the MSP.

5.2.6 Madhya Pradesh: MSP does not help in adoption of technology as the announcement comes well after the sowing of crop. The determinants of the adoption of technology are located in the market prices and market behaviour. MSP has not influenced the structure as well as quantum of inputs since many of the farmers are not even aware of MSP.

5.2.7 Maharashtra: At the State level it is informed that the change in adoption of technology is due to MSP. At district level, it is informed that there is a change in seed variety, increase of fertilizers, change in method of harvesting, change in method of transport.

5.2.8 Odisha: It was reported that MSP has directly affected the use of seed varieties, method of ploughing, increased use of manure and fertilizers, method of transport, etc.

5.2.9 Rajasthan: Only the use of seed variety changed as a result of MSP. There has been an improvement in the use of technologies, however, these are not considered as the effect of MSP.

5.2.10 Tamil Nadu: The officials at the State and District levels (in Pudukottai and Thiruvallur) fully attribute the adoption of changed technology to MSP. Even the Block level officials agreed to the same, with the lone exception of the officials in Thiruvallur Block, according to whom the increase in use of pesticides for improving the crop health cannot be attributed to MSP.

5.2.11 Uttar Pradesh and Uttarakhand: Majority of the farmers are adopting new seed varieties and using new methods of ploughing. The farmers have also been found to use different

methods of transport to carry the crops to the market and also to search new markets for better returns. However, it should be noted that most of the technological changes have not been as a result of MSP.

5.2.12 Punjab: Officials at the State level revealed that MSP of wheat and paddy has contributed towards the adoption of modern technologies such as improved seed varieties, better method of ploughing and expansion of market networks. In Amritsar district, the officials of the State government were in total agreement that MSP of wheat and paddy has led to the adoption of changed technologies for all types of listed parameters. Similarly, the officials of Fatehgarh Sahib District expressed that MSP of wheat and paddy helped in adoption of improved technology in respect to the methods of ploughing and increase in use of fertilizers and pesticides. However, the Block level officials of Chogawan and Jandiala Guru told that the method of ploughing and increase in use of manure only has been positively affected by MSP of wheat and paddy. At village level, the majority of the farmers refused to buy the argument that any technological change has happened because of MSP. However, they agreed that overall MSP has been beneficial to them.

5.3 Impact of MSP on Income of Farmers

The basic purpose behind the MSP is to provide assured price with market to the farmers. However, did it have any positive impact on the income and thereby enabling them in adoption of modern technologies and practices of farming? Through the survey it has been attempted to explore how MSP has impacted the income of the farmers. It was seen that very few farmers in Assam, Bihar, Gujarat, West Bengal, Uttar Pradesh, Uttarakhand and Odisha sold their produce at MSP in the reference period. So their income was not impacted by MSP. However, a major source of income for farmers during the time of

survey was found to be from the agriculture. The State-wise description of the income of the selected farm households in the sample States has been shown below:

5.3.1 Andhra Pradesh: As far as the income profile of the sample households is concerned, it was seen that except 10 percent in the case of

Veeravasaram village, rest all drew their family income up to 90-100 per cent from the agriculture only. The impact of MSP on the investment made by the farmers in agriculture has also been noticed. The farmers are investing wisely on fertilizers and pesticides. Farmers of the selected districts intended to invest on improved farming practices which are an impact of MSP.

Table 5.19. Income from agriculture in farm households in Andhra Pradesh

Villages	Percentage of HH receiving income from agriculture Produce				Percentage of HH invested due to benefit from MSP
	>30%.	30 to 60%	60-90%	90-100%	
(1)	(2)	(3)	(4)	(5)	(6)
Jinnuru				100	0
Jagannadhapuram				100	0
Nelapagula				100	0
Veeravasaram			10	90	0
Kandagatla				100	0
Atmakur				100	0
Gudibanda				100	0
Kapugal				100	0

5.3.2 Bihar: The percentage of income received from the agriculture has been populated in the following table:

Table 5.20. Income from agriculture in the selected farm households in Bihar

Villages	Percentage of HH receiving income from agriculture Produce				Percentage of HH invested due to benefit from MSP
	>30%.	30 to 60%	60-90%	90-100%	
(1)	(2)	(3)	(4)	(5)	(6)
Khandbihari	0	30	40	30	10
Parsando	0	10	50	40	0
Afjalnagar	10	20	30	40	0
Bihima	0	20	10	70	10
Shohe	20	10	40	30	30
Larsa	0	20	40	40	20
Nauwa	10	30	20	40	60
Dhanadehri	0	50	20	30	50
Dhokarha	0	20	30	50	100
Baithania	0	20	30	50	100
Barwachap	0	30	40	30	90
Ghogha	0	10	30	60	100

5.3.3 Gujarat: Since there is no procurement or sale under MSP, the question of impact on income and investment does not arise. In Gujarat State, MSP remain below the market rates and hence the farmer sale their produce in open market at

prevailing market price. The open market sale is well preferred by the farmers as they get on the spot payments. The table below shows the income of households from the agriculture in Gujarat.

Table 5.21. Income from agriculture in the selected farm households in Gujarat

Villages	Percentage of HH receiving income from agriculture Produce				Percentage of HH invested due to benefit from MSP
	>30%.	30 to 60%	60-90%	90-100%	
(1)	(2)	(3)	(4)	(5)	(6)
Dahisarda		NIL	40		20
Metoda		NIL	30		20
Zikiyani		NIL	30		20
Ghungan		10	30		30
Mangrol		NIL	50		20
Gadit		40	20		20
Vedchha		30	20		10
Nani Singloti		20	30		10

5.3.4 Karnataka: 20% of HHs in one sample village, and 10% of HHs in two sample villages reported that they have received 90-100% of income from the agricultural produce. 10% of HHs in three sample villages reported that they have received 60-90% of income from the agricultural produce. 10 of HHs in one village, 20% of HHs in one village, 40% of HHs in three villages, 50% of the HHs in one village and 90%

of HHs in one village have reported that they have received 30-60% of income from the agricultural produce and 40% of HHs in one village, 50% of HHs in two villages, 60% of HHs in two villages and 90% of HHs in two villages have reported that they have received less than 30% of income from the agricultural produce. The following table shows the percentage of agricultural income to total income.

Table 5.22. Income of the Households from agriculture in Karnataka:

Villages	Percentage of HH receiving income from agriculture Produce				Percentage of HH invested due to benefit from MSP
	>30%.	30 to 60%	60-90%	90-100%	
(1)	(2)	(3)	(4)	(5)	(6)
Bhujanga Nagara	60	20	10	10	0
Sovenahalli	0	90	10	0	0
Chiratha Gundu	90	0	10	0	0
Makana Dukku	50	40	0	10	0
Hurugula Vadi	90	10	0	0	0
Bannahalli	40	40	0	20	0
Bommur Agrahara	50	50	0	0	0
Ganangooru	60	40	0	0	0

5.3.5 Maharashtra: It can be seen from the table below that the households are receiving less than 30% of their income from the agriculture produce in 5 selected villages. In 7 selected villages, the households are receiving 30 to 60% income from the agriculture produce. The households receiving 60 to 90% income from the agriculture produce in 11 selected villages. The households receiving 90-100% income from the agriculture produce in all the selected villages. It means that the main income to the households is from agri-

culture only. 6 selected households reported investments due to MSP.

5.3.6 Odisha: Through the operation of MSP the income of the farm households availing MSP opportunity has increased, yet they opined that it is very much negligible in comparison to the increased cost of agricultural labour and inputs and suggested for the enhancement of MSP for paddy.

Table 5.23. Income from agriculture in the households in Maharashtra

Villages	Percentage of HH receiving income from agriculture Produce				Percentage of HH invested due to benefit from MSP
	>30%.	30 to 60%	60-90%	90-100%	
(1)	(2)	(3)	(4)	(5)	(6)
Sonabardi	0	0	50	50	0
Mahadoli	0	10	10	80	0
Savangi (KH)	0	0	20	80	0
Dolabwadi	0	0	40	60	0
Gelavane	50	10	20	20	10
Yelavan jugai	60	20	10	10	0
Kudutri	0	0	50	50	20
Awali (BK)	10	0	30	60	50
Malakondaji	10	20	0	70	20
Holi	0	10	10	80	0
Chamarga	10	20	10	60	20
Rani Ankulaga	0	10	10	70	10

Table 5.24. Income from agriculture in farm households in Odisha

Villages	Percentage of HH receiving income from agriculture Produce				Percentage of HH invested due to benefit from MSP
	>30%.	30 to 60%	60-90%	90-100%	
(1)	(2)	(3)	(4)	(5)	(6)
Nakhaur	0	20	20	60	0
Khatuapada	80	10	0	10	0
Champatisahi	10	20	20	50	0
Botalama	20	20	0	60	0
Jadukhunta	0	50	10	40	0
Matihudi	0	40	0	60	0
Kamarbandha	0	30	0	70	0
Gobardhansahi	40	40	10	10	0
Babebira	0	10	10	80	0
Chakuli	0	10	10	80	0
Tingipali	0	20	0	80	0
Dhangerpali	0	50	0	50	0

5.3.7 Rajasthan: The households do not rely completely on farming as a profession. They do have other sources of incomes as well. The farming was one of the activities that they undertook other jobs as income earned from the farming is not sufficient for their survival. The small size of land holdings is responsible for the lack of marketable surplus.

Table 5.25. Income of Households from agriculture in the villages in Rajasthan

Villages	Percentage of HH receiving income from agriculture Produce				Percentage of HH invested due to benefit from MSP
	>30%.	30 to 60%	60-90%	90-100%	
(1)	(2)	(3)	(4)	(5)	(6)
Laxmipura	-	10%	-	90%	20%
Devpora	-	-	-	100%	30%
Bandi ka Kheda	-	20%	60%	20%	0%
Khati ka Kheda	-	-	-	100%	20%
Manawaton ka Gudha	90%	10%	-	-	-
Kardon ka Gudha	40%	30%	20%	-	-
Daulatpura	10%	10%	20%	60%	-
Turkiyekheda	20%	20%	-	60%	-
25 AS	-	10%	20%	70%	100%
7 KND	10%	20%	10%	60%	20%
Sardarpura Bika	-	40%	10%	50%	30%
3 RJM	-	60%	10%	30%	-

5.3.8 In Tamil Nadu: The income of farmers from agriculture has been depicted in the following table. It does not actually show that it is due to the impact of MSP but it does show the share of agricultural income for the selected households. It was found:

* For majority of the respondents, agriculture is the main source of income. In five out of the eight selected villages (3 villages in Pudukottai and 2 in Thiruvapur), 50% or more than 50% of the respondents are receiving 60% of their incomes from

agriculture. In fact, in 3 villages of Thiruvavarur district, 30% of the respondents earn between 90-100% of their income from agriculture;

- * However, in 1 village each in both the districts, around 40% of the respondents are receiving less than 30% income from agriculture. This is because the poor farmers (small and marginal farmers) supplement their meagre farm income by working as agricultural labourers on daily wages or engage in other non-agricultural

activities such as construction, masonry, tailoring, carpentry or running petty shop, etc.

- * The information also reveals that all the selected farmers from both the villages have reported 'nil' investment due to benefit from the MSP scheme. It may be noted that out of the sample of 80 respondents, 48 are small and marginal farmers who would not be left with investible surplus.

Table 5.26. Income from agriculture in farm households in Tamil Nadu

Villages	Percentage of HH receiving income from agriculture Produce				HH (in %) invested due to MSP
	>30%.	30 to 60%	60-90%	90-100%	
(1)	(2)	(3)	(4)	(5)	(6)
District: Pudukottai					
Kudikadu	40	10	20	30	0
Esamangalam	20	50	30	0	0
Ayeepatti	10	30	30	30	0
KV.Kottai	20	20	60	0	0
District: Thiruvavarur					
Vanjiyur	20	30	20	30	0
Keelakuthangudi	30	40	10	20	0
Kaluvangadu	10	40	20	30	0
KarpaganatharKulam	40	20	10	30	0

5.3.9 Uttar Pradesh: The income from villages has been depicted in the following agriculture of the households in the selected table.

Table 5.27. Income from agriculture in farm households in UP

Villages	Percentage of HH receiving income from agriculture Produce				Percentage of HH invested due to benefit from MSP
	>30%.	30 to 60%	60-90%	90-100%	
(1)	(2)	(3)	(4)	(5)	(6)
District: Etawah					
Marhi	30	50	0	20	0
Sahjpur	20	50	30	0	0
Bancati khurd	30	20	10	40	0
Shekhupur Saraiya	22	44	0	34	0
Average	26	41	10	24	0

(Contd.)

Table 5.27. (Concl.d.)

Villages	Percentage of HH receiving income from agriculture Produce				Percentage of HH invested due to benefit from MSP
	>30%.	30 to 60%	60-90%	90-100%	
(1)	(2)	(3)	(4)	(5)	(6)
District: Faizabad					
Pamparpur	40	60	0	0	0
Saraiyan	20	10	10	60	0
Madhupur	50	0	40	10	0
Gopalpur	30	30	20	20	0
Average	35	25	18	23	0
District: Jhansi					
Pahari Bujurg	10	10	60	20	0
Rampur	10	10	30	50	0
Bidaura	10	30	20	40	0
Ghisoli	30	50	10	10	0
Average	15	25	30	30	0
District: G.B. Nagar					
Chakmirampur	0	10	70	20	0
Mahabalipur	0	10	50	40	0
Dhoom manikpur	0	30	40	30	0
Bambavad	10	40	30	20	0
Average	3	23	48	28	0
District: Mathura					
Hakimpur	10	30	10	50	0
Usphar	20	40	20	20	0
Nagla Udaisingh	10	40	0	50	0
Chhauri	20	50	0	30	0
Average	15	40	7	37	0
District: Varanasi					
Thana	40	60	0	0	0
Maraui	20	10	10	60	0
Aurah	50	0	40	10	0
Mahdepur	30	30	20	20	0
Average	35	25	18	23	0

CHAPTER -VII CASE STUDY ON MSP

During the data tabulation and analysis of MSP study, it was observed that the findings of the study may not be bias free due to the availability of mismatch data and thereby the data gap. During the data scrutiny of respective sample states, it was felt that the occurrence of the non-sampling errors might be the cause of increase in the biasness. This may be due to the non-availability of correct information from the farm household level for the reference period of the study, i.e., from the year 2007-08 to 2010-11. It was also observed that the accurate information provided by the farmers for the year 2010-11 was more effective to derive more reliable findings than the information received /collected for the previous years, i.e., 2007-08 to 2009-10 since the cultivators may not correctly recollect the information for the past years. Therefore, in order to get more accurate findings, by excluding the mismatch data gap, and thereby reducing the non-sampling errors, an attempt has been made in the present chapter to analyze the latest one year data (2010-11) of the sampled farm households on few parameters, and accordingly the conclusions are brought out by the case study covering the sample states.

7.1 Generation of Annual Income from Agriculture by Farmers

The picture of the quantum of income generated from agriculture by the farmers of 13 sample states during the year 2010-11 is tabulated below. The farmers' community is consisting of small, medium and large farmers. The small farmers have their agricultural land up to 2 hectares; the medium farmers have land more than 2 hectares but below 4 hectares and large farmers having land above 4 hectares. In the sample States, out of an average of 100 farmers, 65 farmers are small, 19 farmers are medium and 16 farmers are in the large farming group. It is revealed from the table that 65% of the farmers earn 60% of their annual income from the agriculture and they have possessed land up to 2 hectares only. On the other hand, the medium farmers and large farmers earn their annual income from cultivation to the tune of 68% and 74% of their total annual income respectively. It shows an interesting result that, although the medium and large farmers in our society are comparatively less in number, they are more dependent on farming as their percentage of share of income from agriculture is higher.

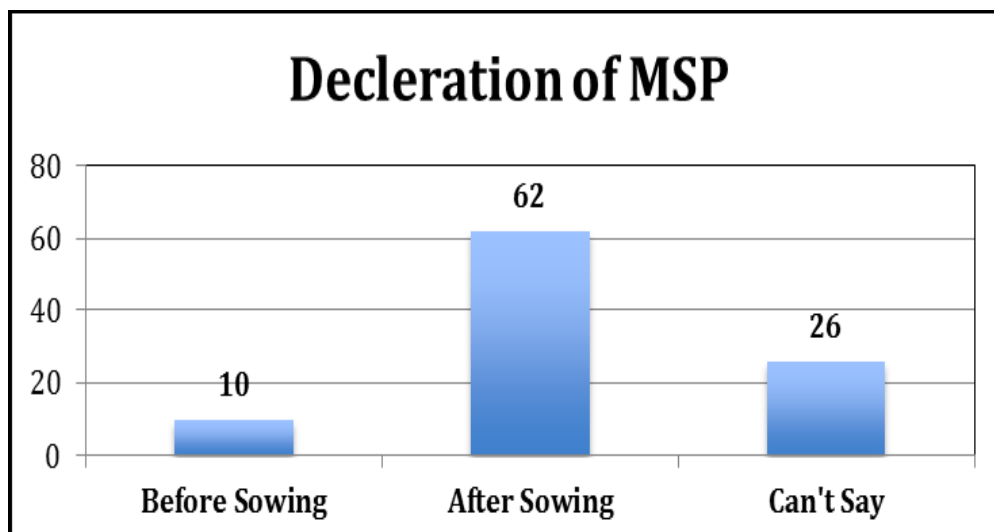
Table 7.1. Annual Income of Farmers received from agriculture in 2010-11

	States	Total Farmers	Small Farmers		Medium Farmers		Large Farmers	
			Number	Income	Number	Income	Number	Income
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1.	AP	80	48	100%	34	99%	18	90%
2.	Assam	80	83	72%	18	69%	-	-
3.	Bihar	120	61	65%	17	50%	42	92%
4.	Gujarat	80	63	58%	20	73%	17	78%
5.	Karnataka	80	60	20%	19	30%	21	40%
6.	MP	160	60	36%	19	100%	21	100%
7.	Maharashtra	120	63	78%	19	85%	18	74%
8.	Odisha	120	67	58%	20	83%	13	90%
9.	Punjab	80	76	70%	21	95%	3	95%
10.	Rajasthan	120	68	65%	18	83%	14	90%
11.	UP	238	61	49%	33	55%	6	55%
12.	Uttarakhand	40	60	46%	20	66%	20	83%
13.	West Bengal	80	99	64%	-	-	1	100%
	Total/Average	1398	65	60%	19	68%	16	74%

When we look at the state specific data of the different sample States, it is found that Andhra Pradesh, Assam, Bihar, Maharashtra, Punjab and Rajasthan have small farmers with more percentage of annual income from the agriculture. The highest is the case of Andhra Pradesh where 48% of the farming community, i.e., small farmers earns 100% of their annual income from agriculture only. In case of Assam, 83% of the farmers are in the small land holding group and they generate 72% of their annual income from cultivation. In Maharashtra and Punjab, 63% and 76% of the farmers who are having small land holding receive 78% and 70% of their annual income respectively from the agricultural land. West Bengal is having 99% of the farmers in the

small land holding group and their annual return from the agriculture out of the total income stands at 64%.

In the medium farming groups, the cultivators of Madhya Pradesh, Andhra Pradesh, Maharashtra, Odisha, Punjab and Rajasthan receive higher percentage of their income, i.e., 100%, 99%, 85%, 83%, 95% and 83% respectively from the agricultural activities. It is also found that the large farmers of most of the sample states except Karnataka and Uttar Pradesh generate more than 74% of their annual income from agriculture. The percentage of income of the large farmers of Karnataka and Uttar Pradesh from cultivation is 40 and 55, respectively.



7.2 Awareness of Farmers about MSP

The farmers are the direct beneficiaries of MSP determined by the Government for different crops every year. As per the policy, the MSP is required to be declared before the sowing season of crops covered under MSP. During the grass

root level data collection, the evaluation teams have interacted with all the categories of farmers of the sample villages of different States and their views have been tabulated and analyzed. The findings of 11 sample States are indicated as below:

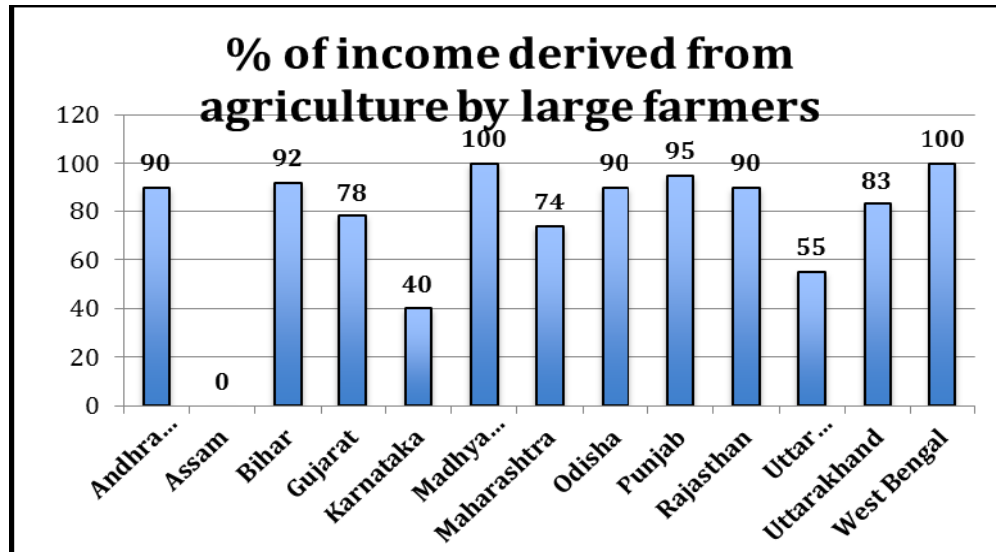
Table 7.2. Awareness of Farmers on MSP of their crops

Sr. No.	States	Total Farmers	% of farmers aware of MSP	Declaration of MSP by Govt. (in %)		
				Before sowing	After sowing	Can't say
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	AP	80	100	1	99	-
2.	Bihar	120	98	32	53	15
3.	Gujarat	80	48	-	48	52
4.	Karnataka	80	85	1	51	48
5.	MP	160	90	-	72	18
6.	Maharashtra	120	45	24	59	17
7.	Odisha	120	68	-	-	100
8.	Punjab	80	100	29	71	-
9.	Rajasthan	120	57	22	38	40
10.	UP	138	100	-	100	-
11.	Uttarakhand	40	100	-	100	-
	Total	1238	81	10	62	28

It may be seen from the above table that 81% of the farmers are aware of MSP fixed by the government for different crops. This awareness varies from 45% to 100% in the different sample States. Out of the 11 States, 100% farmers of 4 States, such as Andhra Pradesh, Punjab, Uttar Pradesh and Uttarakhand, informed that they were aware of MSP. Similarly, the awareness of MSP in the States like Bihar, Karnataka and Madhya Pradesh is quite high, i.e., 98%, 80% and 90% respectively. In other words, it is observed that in almost 2/3rd of the States the awareness of MSP is more than 90%, which means, at least, the farmers are aware of the Government incentives

provided in the shape of MSP for their produces.

Another important thing about MSP is whether the farmers are informed of MSP before or after the sowing season. As per the MSP guidelines, the farmers are supposed to know about the Government price of their commodities before the sowing of the crops. However, the figure above shows that only 10% of the farmers came to know about MSP for the different crops before their sowing season, whereas 62% of the farmers knew about the prices of their produces after the sowing. Also, 28% of the farmers could not recollect the information.



7.3 Medium of Awareness about MSP

As policy awareness plays a vital role on the efficacy of a programme and thus, it is worthy to

ascertain the medium through which the cultivators get to know about MSP fixed by the Government. The information collected is as below:

Table 7.3. Medium of Awareness of Farmers on MSP

S.No	States	Source of Awareness in Percentage					
		Self	State official	News paper	FCI official	Market/ Trad-ers	Knowledgeable person
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	AP	68	20	-	12	-	-
2.	Bihar	19	2	32	14	22	11
3.	Gujarat	-	18	55	26	1	-
4.	Karnataka	60	-	1	-	1	38
5.	MP	2	1	3	51	22	21
6.	Maharashtra	6	4	54	9	13	14
7.	Odisha	9	23	14	-	8	46
8.	Punjab	8	1	43	3	37	8
9.	Rajasthan	1	1	49	2	13	34
10.	UP	16	4	29	18	1	32
11.	Uttarakhand	8	-	38	3	-	51
12.	Total	18	7	29	11	01	34

It is observed from the above table that 18% of the farmers came to know about MSP for their produces through their own efforts. In the Southern States of Andhra Pradesh and Karnataka, the self-awareness about MSP was found to the tune of 68% and 60% respectively. At the

same time, it is a matter of concern that only 7% of the State officials from the district level to the Gram Panchayat level were able to disseminate information on MSP to the farmers of the sample villages. Similarly, 11% of the farmers were made aware of MSP by the FCI officials. 34% of the

farmers received information on MSP from the knowledgeable persons such as, village headmen, Sarpanches, village school teachers and Gram Sevaks. The traders and market brokers are also informing the villagers about the Government rate of the agricultural products. Although, their percentage on the average is very much negligible, still they have shown the presence in the States like Punjab (37%), Bihar (22%) and

Madhya Pradesh (22%).

7.4 Production, Consumption and Sale of Major Crops

The data regarding the production, consumption and sales of major crops has been presented in the following tables:

Table 7.4. Production, Consumption and sale of Major Crops: Wheat

Sr.No.	States	Farmer category and their %		% of land possessed	% of production	% of self consumption	% of sale	% of sale at MSP	% of sale in open market
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1.	Bihar	Small	61	26	34	52	27	-	27
		Medium	17	17	15	13	16	-	16
		Large	22	57	51	35	57	-	57
2.	Gujarat	Small	100	100	100	100	100	-	100
		Medium	-	-	-	-	-	-	-
		Large	-	-	-	-	-	-	-
3.	Punjab	Small	64	29	28	53	26	27	-
		Medium	21	26	26	23	26	26	100
		Large	15	45	46	24	48	47	-
4.	Rajasthan	Small	68	28	38	58	20	18	22
		Medium	18	22	23	21	25	31	19
		Large	14	50	39	22	55	52	59
5.	Uttar Pradesh	Small	61	30	28	42	21	10	28
		Medium	20	24	22	23	21	15	25
		Large	19	46	50	35	58	75	47
6.	Uttarakhand	Small	60	7	20	42	7	-	7
		Medium	20	7	12	20	7	-	7
		Large	20	86	68	38	86	-	86

The table above highlights the quantum of benefits availed by the different categories of farmers with regard to the production, consumption and sale of wheat in few wheat producing States. It emerges from the table that in almost all of the States, the large farmers which are around 20% of the total farming community, possess near 50% of the agricultural land and that they produced half of the total wheat, and sold more than 50% either in MSP or higher than the MSP rate in the open market. For example, in Punjab, 15% of the large farmers have consumed only 24% of wheat, and sold 48% of wheat at MSP

rate.

MSP has been determined by the Central Government also to protect the farmers from distress sale of their crops. The major crops which have support of MSP include wheat, paddy, green gram, black gram, ground nut, maize, ragi, sugar cane, soybean, etc. All these crops are not staple crops for each of our sample States. Generally, wheat and paddy are produced in most of the States. However, on the context of the impact of MSP, an analysis was done to sort out the percentage of benefits accrued by the different

categories of farmers in the major sample States producing these crops. The above table shows that the small farmers having population 61%, 64%, 68%, 61% and 60% of Bihar, Punjab, Rajasthan, Uttar Pradesh and Uttarakhand have produced 34%, 28%, 38%, 42% and 42%, sold only 27%, 26%, 20%, 21% and 7% respectively. They have

availed MSP rate in Punjab 27% in Rajasthan 18%, in Uttar Pradesh 10% only. This is similar in the case of medium farmers. However, the large farmers, though smaller in number have enjoyed the major portion of the benefits received from the open market rate or from MSP of the Government.

Table 7.5. Production, Consumption and Sale of major crop: Paddy

Sr.No.	States	Farmer category and their %		% of land possessed	% of production	% of self consumption	% of sale	% of sale at MSP	% of sale in open market
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1.	Andhra Pradesh	Small	48	35	35	35	35	35	-
		Medium	35	35	34	35	34	34	-
		Large	14	70	31	30	31	31	-
2.	Bihar	Small	61	31	34	57	28	-	28
		Medium	17	18	37	13	18	100	18
		Large	22	51	49	30	54	-	54
3.	Gujarat	Small	92	80	60	88	17	-	17
		Medium	8	20	40	12	83	-	83
		Large	-	-	-	-	-	-	-
4.	Karnataka	Small	52	22	28	38	27	-	27
		Medium	26	29	39	51	38	-	38
		Large	22	49	33	11	35	-	35
5.	Maharashtra	Small	63	25	43	46	4	-	4
		Medium	19	22	35	30	96	-	96
		Large	18	53	22	24	55	-	-
6.	Punjab	Small	64	29	26	53	24	24	25
		Medium	21	27	27	21	27	24	36
		Large	15	44	47	26	49	52	39
7.	Tamil Nadu	Small	83	28	53	74	49	53	45
		Medium	11	35	26	16	28	19	37
		Large	6	37	21	10	23	28	18
8.	Uttar Pradesh	Small	61	24	30	46	26	12	31
		Medium	20	26	24	24	24	17	27
		Large	19	50	46	30	50	71	42

The above table indicates that the production, consumption and sale of paddy by the farmers of 8 sample States. It may be seen that in the case of paddy, the large farmers although less in number, they possess higher percentage of land and comparatively produce, consume and sell more paddy and thereby enjoy more benefits from MSP

and other incentives given by the Government. It is also observed from the table that the peasants of Gujarat, Karnataka and Maharashtra did not sell paddy at the MSP rate, rather they have sold their marketable surpluses in the open market. It means, the open market price of paddy has been invariably higher than the MSP rate.

Table 7.6. Production, Consumption and Sale of major crop: Sugarcane

Sr.No.	States	Farmer category and their %		% of land possessed	% of production	% of self consumption	% of sale	% of sale at MSP	% of sale in open market
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1.	Bihar	Small	61	31	26	-	26	26	-
		Medium	17	18	15	-	15	15	-
		Large	22	51	59	-	59	59	-
2.	Gujarat	Small	60	47	48	-	48	48	-
		Medium	30	32	33	-	33	33	-
		Large	1	21	19	-	19	19	-
3.	Karnataka	Small	65	27	36	-	36	-	36
		Medium	12	17	21	-	21	-	21
		Large	23	56	43	-	43	-	43
4.	Maharashtra	Small	63	25	29	-	29	30	-
		Medium	19	22	26	-	26	27	-
		Large	18	53	45	-	45	43	-
5.	Uttarakhand	Small	60	18	20	-	20	20	-
		Medium	20	14	17	-	17	17	-
		Large	20	68	63	-	63	63	-

The table above shows that the production, consumption and sale of sugarcane in the 5 sample states of the country. It may be seen the large farmers of 4 sample states except Karnataka have possessed large portion of agricultural land, produced and sold comparatively higher percentage of sugarcane than the small and medium farmers. It means, the large farmers have been

enjoying more benefits out of the incentives provided by the Government received. Further, the MSP on sugarcane is availed by the cultivators of the states like Bihar, Gujarat, Maharashtra and Uttarakhand but not the farmers of Karnataka. This indicates that the MSP rate of Sugarcane in Karnataka has been lower than the open market rates.

Table 7.7. Production, Consumption and Sale of Major Crop: Cotton

S.No.	States	Farmer category and their %		% of self-consumption	% of sale	% of sale at MSP	% of sale in open market
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Gujarat	Small	29	-	29	-	29
		Medium	25	-	25	-	25
		Large	46	-	46	-	46
2.	Karnataka	Small	100	-	100	-	100
		Medium	-	-	-	-	-
		Large	-	-	-	-	-
3.	Maharashtra	Small	33	-	33	-	33
		Medium	21	-	21	-	21
		Large	46	-	46	-	46

The above table describes the production, consumption and sale of cotton in 3 sample States. It is seen in the table that the large farmers of Gujarat and Maharashtra have produced 46% (almost half) of the total cotton production during the year 2011 and they have sold the entire quantity. In Karnataka, only the small farmers have produced cotton. It is important to note that all the farmers in the 3 States have sold their entire produce in the open market which also means that the MSP was lower than the market rates.

7.5 Mode of Payments Received by the Farmers

The farmers usually receive their payments for selling their produces at MSP rates to the Government agencies like FCI, CWC etc. or through the dealers authorized by the agencies. The different modes of receipt of payments of the sample States are explained in the table below:

Table 7.8. Modes of receipt of payment for selling their produce under MSP

		Farmers	Modes of Receipt of Payment							
States		Under	In Cash		By Cheque		Deposited in Bank A/c		Other Sources	
		MSP	Number	% of total	Number	% of total	Number	% of total	Number	% of total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1.	AP	80	74	92.5	5	6.25	-	-	1	1.25
2.	Bihar	69	-	-	31	44.9	38	55.1	-	-
3.	Gujarat	10	-	-	10	100	-	-	-	-
4.	Karnataka	80	80	100	-	-	-	-	-	-
5.	MP	87	-	-	-	-	87	100	-	-
6.	Maharashtra	33	-	-	-	-	33	100	-	-
7.	Odisha	47	-	-	47	100	-	-	-	-
8.	Punjab	80	42	52	38	48	-	-	-	-
9.	Rajasthan	20	-	-	20	100	-	-	-	-
10.	UP	67	1	1.5	66	98.5	-	-	-	-
11.	Uttarakhand	40	-	-	30	75	10	25	-	-
	Total	613	197	32.1	237	40.3	168	27.4	1	.2

The above table shows that the farmers have received their sale price from the agencies either in cash or by cheques or in the shape of bank deposits. Although, the statistical average indicates that 32.13% of the farmers have received their payments in cash, in Karnataka and Andhra Pradesh the cash payment is 100% and 95% of the farmers respectively. In majority of the States, such as Bihar, Gujarat, Madhya Pradesh, Odisha, Rajasthan and Uttarakhand, no cash payment has been made to the farmers. On an average, 40.29% of the cultivators of the selected states have received their MSP payments by cheques only. Cheque payments have been made in 100% cases in Gujarat, Odisha, Rajasthan and 98.5% cases of Uttar Pradesh. In five sample States, MSP dues have been given in the shape of bank deposits by the buyers. In Madhya Pradesh and Maharashtra, 100% bank deposits have been done in the favour of the producers.

7.6 Delays in Receiving MSP Payments

As per the prevailing practices, the farmers of the sample States sell their agricultural produce to the brokers /middlemen, FCI and CWC officials available in the regulated market places or at the godowns of FCI and CWC, however, they get their payments either on the spot / same day or within 2-3 days, or within a week. Sometimes it takes time of a month or more. The delays in receiving their money have a negative impact on the cultivators. Very often, it is observed that the needy farmers do not wait for delayed payments and hence, sell their produces even at a lower price to the middlemen than waiting for MSP payment. The table below indicates the time taken in getting MSP rate by the farmers of the selected sample states.

Table 7.9. Time taken in receiving MSP payment by farmers

S.No.	States	Farmers	Time to get/ receive payments within									
			Same day		2-3 days		one week		one month		After 1 month	
			No.	% of total	No.	% of total	No.	% of total	No.	% of total	No.	% of total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1.	AP	80	11	13.6	-	-	2	2.5	62	77.5	5	6.3
2.	Bihar	69	-	-	5	7.25	5	7.25	55	79.7	4	5.8
3.	Gujarat	10	-	-	-	-	-	-	-	-	10	100
4.	Karnataka	80	78	97.5	-	-	1	1.25	1	1.25	-	-
5.	MP	87	-	-	-	-	-	-	87	100	-	-
6.	Maharashtra	33	-	-	-	-	1	3.03	30	90.9	2	6.06
7.	Odisha	47	13	27.6	-	-	-	-	-	-	34	72.3
8.	Punjab	80	20	25	21	26	14	18	25	31	-	-
9.	Rajasthan	20	-	-	12	60	4	20	4	20	-	-
10.	UP	67	1	1.5	-	-	19	28.4	46	68.6	1	1.5
11.	Uttarakhand	40	-	-	3	7.5	3	7.5	1	2.5	33	82.5
	Total	613	123	20.1	41	6.7	49	8	311	50.7	89	14.5

It is found from the above table that only 20% of the farmers of the sample States have received MSP of their produces on the spot / same day and 7% of them have received within 2-3 days. If we look on the State specific cases, 98% cultivators of Karnataka have got the payment same day. In Odisha, Punjab and Andhra Pradesh, the MSP has been paid to the tune of 28%, 25% and 14% farmers respectively on the same day. Similarly, 60% of the farmers in Rajasthan and 26% in Punjab have received MSP from the buyers within 2 to 3 days. One of the major findings which has emerged from the analysis is that 51% of the farmers have received their payments after one week or more, but within one month. Also 15% of the farmers have waited to get MSP even after

one month. The state specific data shows that 100% of the farmers in Madhya Pradesh and 91% in Maharashtra have got MSP within one month. In Odisha, 72% of the cultivators have received their payment after one month.

7.7 Mediums adopted by farmers to sell their Produces

After the harvest of the different produces, the farmers sell their produces either by their own arrangements, or through the brokers or to the Government and private agencies. The table below highlights the medium through which the cultivators of different states have sold their products in MSP.

Table 7.10. Medium through whom the farmers sold their produces in MSP rate

S.No.	States	total Farm- ers under MSP	Medium of Sale									
			Self		Brokers		Govt. Agencies		Private Agents		Others	
			No.	% of total	No.	% of total	No.	% of total	No.	% of total	No.	% of total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1.	AP	80	10	12.5	10	12.5	21	26.3	39	48.8	-	-
2.	Bihar	69	69	100	-	-	-	-	-	-	-	-
3.	Gujarat	10	10	100	-	-	-	-	-	-	-	-
4.	Karnataka	80	22	27.5	55	68.8	-	-	3	3.8	-	-
5.	MP	87	87	100	-	-	-	-	-	-	-	-
6.	Maharashtra	33	33	100	-	-	-	-	-	-	-	-
7.	Odisha	47	47	100	-	-	-	-	-	-	-	-
8.	Punjab	80	17	21	55	69	5	6	3	4	-	-
9.	Rajasthan	20	9	45	9	45	1	5	1	5	-	-
10.	UP	67	67	100	-	-	-	-	-	-	-	-
11.	Uttarakhand	40	40	100	-	-	-	-	-	-	-	-
	Total	613	411	67	129	21	27	5	46	7.5	-	-

The above table shows that 67% of the farmers of the sample States sold their produces at MSP rate through their own arrangements. The farmers of more than half of 80 the States such as Bihar, Gujarat, Madhya Pradesh, Maharashtra, Odisha, Uttar Pradesh and Uttarakhand have sold 100% of their saleable produces in MSP by themselves.

The Brokers and the private agencies have

assisted 21% and 8% respectively of the farmers in selling produces at MSP price, whereas the government agencies have been able to help only 4% of the farmers of the sample States. This trend is a clear indication that the farmers have become more independent and aware to dispose their products at remunerative and protected price, i.e., in the MSP or market rate during the year under reference.

EXTRACTS FROM REPORT OF FARMER'S COMMISSION

5.12.0 Agriculture Price Policy

5.12.1 Agriculture price policy instruments are used to influence the level and fluctuation in prices and importantly the spread from the farm gate level price received by the producer and the price paid by the ultimate consumer. While initially, the State was mainly concerned with regulating the private traders, imports and distribution of foodgrains, etc., at low prices, after the mid sixties, the focus was on using the price policy for increasing the domestic production and providing food-grain to the consumer at reasonable prices. **In India, it is important to note that the producers are also the major consumers of food-grains unlike in many other countries where the farmers constitute a very small percentage of the population.** The Commission for Agriculture Costs and Prices [CACP] has a major responsibility in the matter. The CACP is required to monitor the movements in the terms of trade for agriculture sector and the fair sharing of the gains arising from the application of technology and public investment in agriculture between the farmers and the consumer.

5.12.2 The 25 commodities covered under the Minimum Support Price account for over 80% of the gross cropped area and 75% of the value of output. Some other commodities, which are not covered under the MSP, are included under the Market Intervention Scheme [MIS] discussed earlier.

5.12.3 The Govt. while fixing the level of the support price for a commodity keeps in view the various factors including (a) the cost of production (b) change in input prices (c) input-output parity (d) trend in market prices (e) demand and supply situation (f) intercrop price parity (g) effect on industrial cost structure (h) effect on general price level (i) effect on cost of living index (j) international price situation (k) the parity between price paid and prices received by the farmers.

5.12.4 The cost of production is one of the main considerations in deciding the level of the MSP. However, it is not easy to decide the cost of production. The cost of production of the same crop varies between regions and between farmers of the same region. The CACP recommends the MSP on the basis of the weighted average cost of production in states giving consideration to the variability of the cost of production over the States, taking into account also the factors of production, paid as well as the imputed values of unpaid factors in fixed and variable cost of production. The risk factor and the marketing and post harvest expenses are however, not taken into account. The CACP could look into these aspects.

5.12.5 An important issue is the poor implementation of the MSP in all regions except Punjab, Haryana, Andhra Pradesh, to some extent UP and MP and consequently the market price often rule lower than the MSP. Further, except wheat and paddy, the MSP mechanism rarely benefits farmers of the remaining crops. **There is need for a much stronger protection of MSP in different regions of the country for all commodities.** The Eastern region needs special attention because of the widespread rural poverty in the region as also the fact that the region has considerable potential to improve productivity, if adequate care was taken regarding pricing, marketing, technology and credit support.

5.12.6 Another connected issue is the delay in issue of support price [MSP]. The announcement could influence the decision of the farmers in allocation of land and other resources only if it is made well before the sowing season. While announcement for Rabi have been often well in time, the MSP for Kharif in the past had been delayed.

5.12.7 Notwithstanding the above constraints, the MSP may have to be continued in the foreseeable future and its implementation should be improved. However, the strategies may have to change in view of the changed circumstances. We

are not facing scarcity conditions and the economy is much more open than what it was earlier. The High Level Committee on Long Term Grain Policy 2002 (under the Chairmanship of Prof. Abhijit Sen has favoured the MSP around the national floor level prices with all India open ended operations. However, to protect the farmers from market risks, the above Committee suggested price and income insurance coupled with negotiable warehouse receipt system. These developments may take time and hence the change in strategy may have to be gradual. The commodities, which are not covered under the MSP, market intervention on a selective basis also needs to be resorted to for ensuring that the prices realized by the farmers are stabilized. Price behaviour of sensitive commodities like onions, potatoes, tomatoes etc. needs to be closely watched particularly during the glut season for need based market intervention under MIS. However, the policies regarding monopoly procurement of cotton in Maharashtra, levy on rice mills etc. need to be reviewed.

5.12.8 The small and marginal farmers are more concerned about the cost of production and more particularly the cost of paid out inputs. Any strategies to minimize subsidies on inputs and compensating the farmers by allowing increase in prices would need to be examined very carefully

as most of the marginal farmers in particular are likely to be net buyers of agriculture commodities. However, there is no doubt that input subsidies need a closer look and a much better focus.

5.12.9 The pricing policy has contributed towards achieving self-sufficiency in foodgrains and also assisted in commercialisation and diversification of our agriculture. In spite of general criticism that populism and not economic consideration are responsible for various decisions, the Government have, to a large extent balanced sharing the gains of technology and public investment between the farmers and the consumers. However, as stated earlier, the MSP could not be effectively ensured across the country and the prices in different parts of the country have often been lower than the MSP. Perhaps it could also be said that the price signals, research, extension and public policy together could have contributed more in improving the dryland agriculture and greater diversification and faster movement from low value agriculture to high value agriculture in the country. It is also very important that the import tariffs on farm commodities produced in the resource poor regions (particularly dryland) like oilseeds are carefully monitored and maintained at levels to provide enough incentives to the dryland farmers.

Box 5**Long-Term Grain Policy:**

The High Level Committee on Long Term Grain Policy-2002 under the Chairmanship of Prof. Abhijit Sen had examined the various aspects connected with the Minimum Support Price [MSP] and Price Support Operations. The Committee had observed as under:

"MSP policy was critical in India's achievement of food grains self sufficiency but is now grossly distorted. Nonetheless we are convinced that MSP policy should continue, but with immediate correction. We recommend.

1. The Central Government should announce the MSP policy before the sowing season on recommendations of the CACP.

- [a] The CACP should be made an empowered statutory body.
- [b] In recommending MSPs, which should apply on Fair Average Quality [FAQ] grain, the CACP should go strictly on the basis of C2 cost of production, (i.e., all costs including imputed costs of family labour, owned capital and rental on land) in more efficient regions.
- [c] The CACP should also indicate its estimates of A2 + FL costs, (i.e., costs actually paid plus imputed value of family value labour) for relatively high cost regions.
- [d] The CACP should recommend only a single MSP for paddy.
- [e] The MSP, set at a floor price on the recommendations of the CACP, should have a statutory status. In particular, the responsibilities of the Central Government and obligations of the State Governments should be defined clearly.
- [f] All agencies, Central, State, Cooperative or Private, which are a part of public grain management, should be legally bound by the MSP policy.
- [g] If the present situation continues, where some States impose excessive levies on MSP purchase, the Central Government may announce its MSP policy by declaring a procurement price inclusive of an uniform 4% allowance for such levies over the MSP.

2. Once the Government announces the MSP, it should underwrite open-ended purchase of FAQ grains to assure the growers an adequate return to their cost. It should be the responsibility of the Central Government to make the fiscal and banking provisions necessary to enforce MSP throughout the country".

Recommendations:**1.5.10 Assured and Remunerative Marketing Opportunities**

1.5.10.1 Assured and remunerative marketing opportunities hold the key to continued progress in enhancing farm productivity and profitability. The Union Ministry of Agriculture has already

initiated several significant market reforms. The State Governments will have to undertake such reforms speedily in order to provide more options to the farmers for selling their produce, allowing the private sector, including the 27 cooperatives, to develop markets, promote direct sales to consumers and remove bottlenecks and scope for corruption and harassment. What farmers seek is greater protection from market fluctuations.

Important steps needed are: i) The Minimum Support Price (MSP) mechanism has to be developed, protected and implemented effectively across the country. MSP of crops needs to keep pace with the rising input costs. ii) The Market Intervention Scheme (MIS) should respond speedily to exigencies especially in the case of sensitive crops in the rainfed areas. iii) The establishment of Community Foodgrain Banks would help in the marketing of underutilized crops and thereby generate an economic stake in the conservation of agro-biodiversity. iv) Indian farmers can produce a wide range of health foods and herbal medicines and market them under strict quality control and certification procedures. v) The Public Distribution System (PDS) should be universal and should undertake the task of enlarging the food security basket by storing and selling nutritious millets and other underutilized crops.

1.5.10.2 Farmers require authentic advice based on meteorological, marketing and management information for land use decisions and investments. Restructured Land Use Boards supported by a team of technical experts/agencies should render this service. Infrastructure support has to be put in place to minimize post-harvest losses and enable agro-processing and value addition at the village level itself to increase jobs and income. The collective strength of farmers has to be built up by encouraging farmers' organizations and other entities like cooperatives and small farmers' estates so that they can get a fair deal and enjoy the economies and power of scale. Farmers, particularly the small and marginal ones, need pledge loans to be able to avoid distress sale and sell their produce when the price is favourable. Constraints in improving the negotiability of warehouse receipts also need to be removed. 28

1.5.10.3 There is need for an Indian Trade Organisation (ITO), that will safeguard the interests of farmer families by establishing a Livelihood Security Box to ensure fair trade. The

Livelihood Security Box should have provision to impose quantitative restrictions on imports and or/increases in import tariffs, under conditions where imports of certain commodities will be detrimental to the work and income security of large numbers of farming families. It should be emphasized that there is no level playing field between the capital, subsidy and technology driven mass production agriculture of the industrialized countries, and the "production by masses" agriculture of India characterized by weak support services, heavy debt and "resource and technology poverty". An Indian Single Market will also help to promote farmer-friendly home markets. The bottom line of our trade policies in agriculture should be the economic wellbeing and livelihood security of agricultural families. Nothing should be done that will destroy job opportunities in rural India.

1.5.10.4 In relation to commodities that are exported, it will be essential to conform to WTO regulations. At present, such commodities constitute about 7% of total agricultural production in the country. Quality and trade literacy programmes have to be launched across the country.

1.5.10.5 Farmers' Associations and SHGs should be helped to export on competitive terms by spreading awareness of the opportunities available for external agricultural trade. The agri-export zones should be further strengthened and should become places where farmers will get the best possible price for their produce. The future of Indian agriculture will depend upon the efficiency and seriousness with which pro-farmer marketing systems are put in place.

1.5.10.6 The twin goals of ensuring justice to farmers in terms of a remunerative price for their produce, and to consumers in terms of a fair and affordable price for staples (65% of consumers are also farmers) can be achieved through the following integrated strategy: i) The MSP and

procurement operations are two separate initiatives and should be operated as such. The Government needs to ensure that both the farmers (who also constitute the majority of consumers) and the urban consumers get a fair deal. Due care should be taken of the cost escalation after the announcement of the MSP in its operationalisation. The Government should procure the staple grains needed for the PDS at the price private traders are willing to pay to farmers. Thus, the procurement prices could be higher than the MSP and would reflect market conditions. The MSP needs to be protected in all the regions across the country. ii) The food security basket should be widened to include the crops of the dry farming areas like bajra, jowar, ragi, minor millets and pulses. The PDS should include these nutritious cereals and pulses purchased at a reasonable MSP. This will be a win-win situation both for the dryland farmer and the consumer. We will witness neither a second green revolution nor much progress in dryland farming unless farmers get assured and remunerative prices for their produce. iii) Both universal PDS and enforcing MSP throughout the country for the selected crops are essential for imparting dynamism to agriculture.

1.5.10.7 The Commission on Agricultural Costs and Prices (CACP) should be an autonomous statutory organization with its primary mandate being the recommendation of remunerative prices for the principal agricultural commodities of both dry-farming and irrigated areas. The MSP should be at least 50% more than the weighted average cost of production. The "net take home income" of farmers should be comparable to those of civil servants. The CACP should become an important policy instrument for safeguarding the survival of farmers and farming. Suggestions for crop diversification should be preceded by assured market linkages. The Membership of the CACP should include a few practising farm women and men. The terms of reference and status of the CACP need review and appropriate revision.

ENDING THE ERA OF FARMERS' SUICIDES AND LOW AGRICULTURAL GROWTH RATE: SYNOPTIC ACCOUNT OF NCF RECOMMENDATIONS

Recommendations:

1.2.6 Markets

v. Implementation of MSP across the regions needs considerable improvement. Arrangements to protect the Minimum Support Price (MSP) needs to be put in place for crops other than paddy and wheat. These include coarse cereals like millets. Without MSP support or other effective need-based market intervention by the government, advice to farmers on crop diversification could lead to disastrous results. MSP should be adjusted according to the wholesale price index.

CHAPTER 3.1 GUIDING PRINCIPLES UNDERLYING THE DRAFT NATIONAL POLICY FOR FARMERS BACKGROUND

3.1.16 The existing minimum support price [MSP] policy coupled with procurement operations has benefited mainly the farmers growing rice and wheat and that too in a few States only. Though the MSP is announced for 25 commodities accounting for nearly 75% of the value of output and nearly 80% of the gross cropped area, the prices often remain lower than MSP in most of the markets in the country. Further, there are huge variations in the prices received by farmers in the same district or town leave alone the State. The farmers believe that of late the MSP have not kept pace with the increase in prices of inputs. Further, the need for a much stronger protection of MSP in different regions of the country for all commodities cannot be over emphasized. Exploitation by traders/middlemen, less than satisfactory performance of the Agriculture Produce Marketing Committees, large supply chain, absence of grading, post harvest losses and lack of value addition means that the farmer gets much less than what he could get for his produce.

Coupled with uncertainty of prices, the distress sales add to the farmers' problems. As pointed out in the Second Report of the National Commission on Farmers referred to in the previous paragraph, micro level studies show that 50% of the small farmers' produce is sold in distress. The need is for several policy level changes, increased investments and creation of more effective instruments, systems and structures to remedy the situation, including mitigation of market risks. Development of a farmer centric contract farming system deserves a high priority in this regard.

STATE LEVEL CONSULTATION OF MAHARASHTRA FOR FEEDBACK ON THE DRAFT NATIONAL POLICY FOR FARMERS AT NAGPUR ON 1st MAY, 2006.

6. Market and Price

iii) MSP should cover cost of production; It should be decided State-wise because cost of production varies from State to State.

STATE LEVEL CONSULTATION OF MAHARASHTRA & GOA FOR FEEDBACK ON THE DRAFT NATIONAL POLICY FOR FARMERS AT PUNE ON 5th SEPTEMBER, 2006.

9. Price and Market

vi) Advance MSP needs to be fixed for commodities and perishable crops to enable farmers to decide what to grow.

STATE LEVEL CONSULTATION OF ORISSA FOR FEEDBACK ON THE DRAFT NATIONAL POLICY FOR FARMERS AT BHUBANESWAR ON 28th JULY 2006.

6. Research, Extension, Technology & Inputs

xi) Subsidy on fertilizer, pesticides, seeds etc. is benefiting the manufacturers and traders of these

items. The farmer does not get any benefit. Therefore, instead of subsidizing fertilizer, pesticide, seed etc., the fund can be better utilized for fixing higher MSP which will directly help the farmers.

STATE LEVEL CONSULTATION OF PUNJAB FOR FEEDBACK ON THE DRAFT NATIONAL POLICY FOR FARMERS AT CHANDIGARH ON 24TH AUGUST, 2006.

8. Market

vi) No MSP for crops like Sugarcane, Pulses etc. was available for the farmers. MSP should be linked to wholesale price index. Procurement should be at market price higher than MSP and should be effected in time.

STATE LEVEL CONSULTATION OF RAJASTHAN FOR FEEDBACK ON THE DRAFT NATIONAL POLICY FOR FARMERS AT BIKANER ON 29th AUGUST, 2006.

9 Marketing

iii) Support price for animal products should also be fixed, because a large share of consumer expenditure went to the marketing/private agencies.

STATE LEVEL CONSULTATION OF TAMIL NADU, PONDICHERRY AND ANDAMAN & NICOBAR ISLANDS, FOR FEED BACK ON THE DRAFT NATIONAL POLICY FOR FARMERS AT CHENNAI ON 27th JUNE, 2006.

14. Market and Price

iv) The minimum support price should be extended to all crops.

vi) Direct purchase by Government to avoid middlemen interference to prevent price fall is

essential.

vii) State Price Commission should be setup to determine price locally and cover all crops.

STATE LEVEL CONSULTATION OF UTTARANCHAL FOR FEEDBACK ON THE DRAFT NATIONAL POLICY FOR FARMERS AT DEHRADUN ON 20th JUNE 2006.

10. Marketing

STATE LEVEL CONSULTATION OF UTTAR PRADESH FOR FEEDBACK ON THE DRAFT NATIONAL POLICY FOR FARMERS AT LUCKNOW ON 4th AUGUST, 2006.

10. Market and Infrastructure

i) MSP should be fixed based on the cost of cultivation. ii) Full payment for sugarcane should be ensured to farmers. iii) MSP increased by 10% whereas input costs had gone up by about 100%.vi) Import of food grain at a higher price than the MSP offered to the farmers was pointed out by some participants.

STATE LEVEL CONSULTATION OF WEST BENGAL FOR FEEDBACK ON DRAFT NATIONAL POLICY FOR FARMERS HELD ON 1ST AUGUST, 2006 AT KOLKATA

8. Price and Market

iv) Fixation of MSP of agricultural commodities is not always reasonable. Rational fixation of price of all the agricultural commodities is urgently required.

x) MSP for fish is not applicable.

xi) Farmers in many States are committing suicide mostly on account of non-receipt of remunerative price of their commodities. xii) Cost of production of Agricultural commodities varies from district to district. Therefore, different procurement prices have to be declared for different districts. In general, inputs cost has been rising fast whereas output prices remain depressed.

PRICES, COSTS OF PRODUCTION AND TERMS OF TRADE OF INDIAN AGRICULTURE*

Nilakantha Rath**

I am very thankful to the members of the Indian Society of Agricultural Economics for doing me the honour of electing me to preside over this Annual Conference of the Society. I am fully conscious of the generosity and appreciation shown by fellow members to a loyal old member of the Society, which is the premier representative body of scholars of agricultural economics in India. I shall try to justify your affection and trust to the best of my ability.

This meeting of the Society happily coincides with the Twenty-fifth anniversary of the Agro-Economic Research Centre of the Sardar Patel University, our hosts. This Agro-Economic Research Centre is one of a chain of such Centres, established with the full financial assistance of the Ministry of Agriculture of the Government of India, in different Universities and research institutions in the country. These Centres are standing testimony to the excellent co-operation between the Government and the Universities in promoting research into the problems of India's agricultural economy. The Agro-Economic Research Centres, in addition to the Agricultural Universities, have made a significant contribution to our understanding of the forces shaping the rural economy and the impact of various policy measures in the field. The Centre at Vallabh Vidyanagar, under able leadership, both past and present, has contributed very effectively to research as well as training of researchers in agricultural economics. I take this opportunity to join you all in wishing the Centre even more active and fruitful contributions to the study of the Indian rural economy in the years to come.

In recent years considerable body of public opinion, including political, academic, as well as farmers', has expressed distress at what is characterised as unfair treatment to the agricultural sector in the economy over the years. This is other than the concern with poverty in rural India. It is concerned with the total farm sector. The leaders of farmers' organisations have tried to highlight this by drawing a distinction between 'India' and 'Bharat', the former referring to the urban sector and the latter to the rural.

At a sectoral aggregate level there appears justification in this distinction between 'India' and 'Bharat'. The total real Net National Product (NNP) of India, (i.e., approximately the National Income) increased at an average compound rate of about 3.5 per cent during the last 30 years. During the same period, the total population grew at the rate of about 2.2 per cent, giving a growth rate of about 1.3 per cent in the real per capita income. In contrast to this picture for the total economy, the picture for the agricultural sector is characterized by stagnancy of income at the per capita level. While the total NNP in the agricultural sector increased at about 2.2 per cent a year during the last three decades, the proportion of the total population dependent on agriculture for its living remained unchanged at 70 per cent, and therefore recorded the same rate of growth as the total population, leaving the average real per capita income of the people in agriculture unchanged over the years. It is obvious that the real increase was in the non-agricultural sector, essentially urban.

* Presidential Address delivered at the 45th Annual Conference of the Indian Society of Agricultural Economics held under the auspices of Agro-Economic Research Centre, Sardar Patel University, Vallabh Vidyanagar, Anand (Gujarat) on December 27, 1985.

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I wish to record my thanks to the Economic and Statistical Adviser to the Ministry of Agriculture, Government of India, for making available to me the unpublished data on Farm Harvest Prices and the Costs of Production of Crops, obtained through the annual surveys. I also wish to thank Ms. Nishita Pradhan for great help with all the calculations. This essay is based on a part of the research work being funded by the University Grants Commission.

Of course, every one realises that these are sectoral averages, and in each sector there were households which had done better than the average and others who had fared worse. In regard to the agricultural sector, two rather sharply opposite views have been presented.¹ One view is that during the last two decades in particular, the cultivator sub-sector of the agricultural sector, consisting of cultivators who have surplus produce to sell, has been able to improve its income position through favourable terms of trade. These benefits, however, have not reached the other sub-sector consisting of marginal farmers and landless labourers. The representatives of farmers' organisations as well as some others, have, on the other hand, maintained that the farm sector has been receiving a raw deal, the terms of trade have moved against the cultivators and therefore their real income situation has, by and large, deteriorated or at best stood unchanged, and the non-agricultural sector has been having it good at the cost of the agricultural sector. If the cultivators are badly off, they say, their labourers cannot be better off. Their approach to the improvement in the farmers' income position is mainly through improvement in their terms of trade. This, they consider, can be achieved by the State fixing prices of different farm products on the basis of their costs of production every year, which would also provide incentive to greater farm production. They contend that the Agricultural Prices Commission (APC) does not determine the support prices of farm products strictly on the basis of cost of production. What is more, the way the cost of production is computed has flaws that adversely affect the interest of the farmers.

Sometimes the advocacy has indeed gone further.² It is contended that it is not enough to fix prices on the basis of the cost of production. The prices should be fixed as high as possible (depending on the price elasticity of demand), so that the total sales revenue should be the maximum. The possibility of excess production and accumulation of stocks in such circumstance can be avoided by fixing output quota for individual producers. In effect, it is suggested that the state should operate a cartel for every type of farm produce. This would ensure the highest possible income to the farmers, i.e., 'Bharat', and thereby improve parity with 'India'.

It would be useful to examine the question of fixation of price on the basis of cost of production, and then turn attention to the trend in terms of trade of agriculture during the last two decades.

In India one finds a strong appeal among not only farmers' representatives but many others for the feeling that the price of farm product must cover its cost of production and that the state should ensure a fair price to the farmer by fixing the price of the produce to cover the cost of production. The student of economics can react to this by simply saying that price of a commodity is determined by forces of supply and demand, and to fix the price on the basis of cost of production, which underlies supply, without reference to demand, is sure to give rise to the, chronic problem of surplus. It is, however, not very helpful to dispose of the matter in such summary fashion. During the last two decades students have tried to point out the pitfalls and

1. See, for example, Ashok Mitra: *Terms of Trade and Class Relations*, Frank Cass and Co., Ltd., London, 1977. R. Thamarajakshi, "Intersectoral Terms of Trade and Marketed Surplus of Agricultural Produce, 1951-52-1965-66", *Economic and Political Weekly*, Vol. IV, No. 26, June 28, 1969, and "Role of Price Incentives in Stimulating Agricultural Production in a Developing Economy", in D. Ensminger (Ed.): *Food Enough or Starvation for Millions*, TataMcGraw-Hill, New Delhi, 1977. A. S. Kahlon and D. S. Tyagi, "Inter-Sectoral Terms of Trade", *Economic and Political Weekly*, Vol. XV, No. 52, December 27, 1980.

2. Sharad Joshi: *Bharatiya Shetichi Paradinata* (in Marathi), recorded by Suresh Ghate, Shetkari Prakashan, Alibag (Maharashtra), 1982, p. 26.

defects in this rather simplistic approach to price determination.³ I shall try to summarise these here.

Since most agricultural farms are multi-product enterprises, calculation of the cost of production of a particular product on the farm involves not only the ascertaining of actual purchase or paid-out costs of specific current inputs, but also apportionment of any common cost incurred at the farm level for different products. This requires collection of data of particular sort that is not always readily available. More importantly, if the input is in the nature of a capital equipment, calculation of its depreciation involves all the problems raised by economists about the use of historical values of assets for the purpose. While the economic logic is clear, there are no foolproof empirical methods of applying these. A serious matter in this context is the valuation of the services of land. The farmers' spokesmen have often contended that the cost of land services in the cost of production of crops has been under-valued, and that the going price of the particular type of land should be taken as a basis for valuing the service of land in calculating the cost of production of the crop. Apart from the difficulty of estimating the possible market price of any piece of farm land where very little actual sale purchase transaction takes place in the locality in a year, it is pointed out that land value in India is high partly because of the sense of security and prestige associated with the possession of land. Therefore, it would be improper to attribute this unascertained value of the service of land to the cost of production of a crop grown on that land. Nor is the basis of the total allocation of the annual cost of land among the different crops grown on it during a year, very clear. But most important of all is the old economic knowledge that the return to the services of a fixed

factor (or factor in short supply), like land, depends on the price of the produce it helps to produce, and not vice versa. Raising the price of a farm produce by attributing a higher value to land may only result in a further rise in land value next year, leading to further rise in price, and so on. The price rise will be reflected essentially in rising rental. The allocation of costs also becomes problematic when the same land grows mixed crops in the same season, or where a crop has important marketable by-products. Empirically there are no satisfactory ways of dealing with these problems.

Besides allocation of costs, difficulties arise in the valuation of inputs not purchased in the market but supplied by the farm households. Valuation of the farm household labour is the most important of these in the Indian context. While current method of valuation of such labour involves an attempt at estimating its opportunity cost, one may suspect that even this in many situations might be an overestimate. Most of farm management studies in India during the last three decades have shown that a significant proportion of farmers, particularly the small and even medium farmers, were incurring loss, often repeatedly in three consecutive years, when all costs, including land and family labour costs (the so-called Cost C), are deducted from the gross value of output. Since land and family labour are the two major items for which the value is imputed, and since many feel that the land cost is under-valued, one comes to the conclusion that family labour in this situation does not really earn what is attributed to it as its opportunity cost. The costs that are presently being attributed as opportunity cost, therefore, are more in the nature of normative wage rates. Moreover, it is conceivable that the opportunity cost of family labour may not be the same at all times of the year. All

3. Nilakantha Rath, "On Fixation of Price in Agriculture on the Basis of Cost of Production", *Artha Vijnana*, Vol. 7, No. 4, December 1965, and *Artha Vikas*, Vol. 2, No. 1, January 1966. M. L. Dantwala, "Agricultural Price Policy", *The Economic Times*, February 7, 1981. M. K. Bennett: *Farm Cost Studies in the United States*, Food Research Institute, Stanford, 1928.

these go to indicate the many empirical difficulties and shortcomings in estimating the cost of production of any crop grown by a farmer in any year.

The matter of using cost data for price fixation becomes even more problematic when we notice that different farmers have different costs (however estimated) per unit of output, and that there is no single 'the' cost of production. Indeed, the farm cost data reveal a wide range of costs per unit of output over which farmers, even in a limited group of villages, are distributed. Which cost of production should then provide the basis for price fixation? The average cost has no particular merit; it does not cover the cost of the same proportion of farmers, or of land under the crop, or of the total produce in any year; and it leaves more or less half of these uncovered. Recognition of this led some in the U. S. A. in the twenties and in India during the last two decades to advocate what is called the 'bulk-line cost' approach to price determination. It simply means that the price should be fixed at such a level as would cover the unit cost of production of the bulk of the output, that bulk being put at 85 per cent of the total produce. There is no justification for this particular percentage, except that it excludes some who presumably are 'inefficient' producers or had accidentally high cost. The arbitrariness of such a cut-off point apart, the real trouble with fixation of price with either an average or a bulk-line cost is that it completely neglects the unavoidably important considerations of inter-crop and inter-regional relative prices. Even a cursory look at cost data, crop and regionwise, will show what unintended havoc this approach can play with relative prices and their consequences. Fixation of prices on the basis of cost of production (however defined) might lead to wide differences in regional prices of a crop, completely unrelated to costs of transport from one region to the other. The differences in prices of competing crops even in the same region may lead to great shortages and surpluses of different crops.

Besides the conceptual, empirical and policy implications of the suggestion for fixation of farm product price on the basis of its cost of production, there are operational difficulties as well. The price fixed by the Government, in order to be effective, must be announced before the crop arrives in the market, i.e., some time early in the harvesting season. Now, it is inconceivable that the cost of production data for the current season, collected from the farmers, along with yield estimates, can be processed and made available to the price fixing authority in time for fixation of price on its basis before marketing starts. It is common knowledge that the cost data based on cost of production surveys during the last ten years become available to the price fixing agency with almost a two year lag, despite the use of computers. But what is more, it has been rightly argued that if the price fixed by the state is to affect the decision of the farmer, it must be announced before the sowing of the crop, and not before its marketing. That, however, rules out the possibility of fixing the price on the basis of the actual cost of production. Any other method of estimating possible cost will be conjectural and hence subject to varying degrees of error.

In view of all this, it is no wonder that neither the APC in India during the last two decades of its existence, nor any other country I am aware of, has been able to fix the price of any farm product on the basis of its actual cost of production. The APC merely states that it takes, among other things, costs of production into account in fixing price, presumably because it thinks it can do no better.

An alternative approach that has been widely used in the western world for fixing support price by the state for farm products is the fixation of price of produce at such level as would maintain a certain parity between prices received and prices paid by the farmers. While this approach is followed in order to protect the farmer's real income position, it can also be useful as a price

support measure for purposes of production and supply. Scholars in India have tried to compute inter-sectoral commodity terms of trade for agriculture in order to ascertain if the prices received by the farmers were relatively higher or lower than the prices paid by them to the non-farm sector on farm and household account. These exercises,⁴ with their limitations of method and data, have been at the all-India level for the entire agricultural sector, sometimes consisting also of plantations like tea, etc., and the forest sector which is mainly in the public sector. While they are of use in understanding the country-wide changes in the terms of trade of the agricultural sector, they naturally smother the differences among regions and major crops in this regard. In the context of differential rates of agricultural development not only in different regions but also of different crops, it would be useful to know how terms of trade have changed for different crops in different regions, if one is to have a clearer understanding of the forces operating on production and income distribution in the farm sector. I, therefore, propose to make a modest attempt in this direction within the limitations of the information available to me.

I propose to examine the changing terms of trade of the major crops in the different States for which the relevant data are available for the last two and half decades. For prices received the data used are the farm harvest prices of individual crops in the State concerned. It may be argued that the farm harvest price may not be the best indicator of the price received by the farmer, since most large farmers sell the bulk of the produce not soon after harvest but much later, in the lean season preceding the next harvest. This point was checked by comparing the index of the farm harvest price of a particular crop with the wholesale price index of that crop in the last four

months before the next harvest, during the period 1961-80. (These data and graphs are not presented here to save space.) It was found that there was no evidence to believe that the index of the wholesale price of a crop in the lean season had increased faster than the index of its farm harvest price during the period; in some years there was a slightly higher increase in the case of some crops, in other years the rise was lower. Therefore, there is no harm in using the index of farm harvest prices as the measure of prices received by farmers.

Prices paid by the farmers are of two types - the prices of the farm inputs purchased from the non-farm sector, and prices of household consumption items purchased from the non-farm sector. (Normally, inter-sectoral terms of trade are calculated for the farm sector as a whole. I have chosen to compute such terms of trade for individual crops, with all its limitations, because the problems of different regions, even for the same crop, as well as of the different crops, are not the same.) The farm inputs purchased from the non-farm sector consist of five items listed in the farm cost surveys conducted under the aegis of the Ministry of Agriculture: fertilisers; insecticides; electricity, diesel and flow irrigation water; farm machinery and equipment and their repair as well as farm building. We have used the all-India wholesale price of fertiliser, insecticide, diesel oil, electricity and non-electrical machinery, prepared by the office of the Economic Adviser, as indicative of the prices of the farm inputs purchased from the non-farm sector. In order to arrive at a weighted average price index of all these inputs, we used the percentages of the expenditure on these inputs to their total expenditure for a particular crop in a particular State, as weights. These expenditure data are obtained from the cost of production surveys conducted by the Ministry of Agriculture in various States

4. Thamarajakshi, *op. cit.* A.S. Kahlon and D.S. Tyagi: *Agricultural Price Policy in India*, Allied Publishers Pvt. Ltd., Bombay, 1983. A.S. Kahlon and M.V. George: *Agricultural Marketing and Price Policies*, Allied Publishers Pvt. Ltd., Bombay, 1985. K. Subbarao, "Farm Prices: A Survey of the Debate", Institute of Economic Growth, Delhi, 1984 (mimeo.).

during the years 1972-83. Where such cost data for a crop were available for a number of years, it was noticed that in most cases the year to year variation in their percentage distribution was rather small. Therefore, we have taken the average percentages for the different years as weights. Naturally, this composite price paid index for farm inputs could be computed only for such crops and States for which the cost of production data were available.

As for the prices paid index for farm household consumption items purchased from the non-farm sector, the basic items for the rural population for each State and their weights were taken from the 17th Round of the National Sample Survey (NSS), 1961-62. (It would have been preferable to use such data relating to a later period, say the seventies, if they were available to us.) The items included are: Vanaspati, all edible oils, sugar and gur, tea and coffee, tobacco products, intoxicants, kerosene, cotton, woollen and silk cloth and readymade wear, bedding, medicine, soap and utensils. Items like shoes, transport, consumer durables could not be considered since their price indices were not available for the whole or part of the period. However, these exclusions may not make a significant difference to the prices paid index in view of their weight in the overall per capita expenditure in most States. The price indices used for these commodities are the all-India wholesale prices. (Regional rural retail price indices would have been better, if available.)

It is, however, not practicable to combine these two composite indices of prices paid, one for purchased inputs and the other for purchased items of household consumption, when the terms of trade index is for an individual crop. We shall, therefore, perforce use these two indices separately to deflate the index of farm harvest price of a particular crop and try to read them together, a rather clumsy job indeed.

The terms of trade index (or the parity index) requires that one refers to a year (or period) during which the relative price position was considered satisfactory from the farmers' and others' point of view. The effort is then to maintain this parity or terms of trade, in order to protect the farmer's real income position, as also incentive for production. It may be difficult to find a single year or even a 2-3' year period during the last 20-25 years which might satisfy this requirement for all crops in all States. We have chosen 1961-62 as the base year for our purpose, since the beginning of the sixties was a generally satisfactory period for agriculture. However, choice of a different year or period during the years 1961-83, can be made and the indices appropriately recalculated (of course, with the same weights) from our tables, if preferred. For computing the terms of trade with respect to the input prices, the prices index of the output of a year, say 1962-63, is divided by the composite input price index for the financial year 1962-63. For the terms of trade index with reference to household consumption goods purchased from the non-farm sector, the price received index of, say 1962-63, is divided by the composite price paid index of 1963, and so on, and the 1961-62 terms of trade index equated to 100. The data are presented in Tables I and II.

Examination of the terms of trade index with respect to input prices, for as many crops and States for which the relevant data were available (Table I), shows the following trends:

(i) The index for all crops (except jute) in all States showed a high level, till 1974-75; The indices reached peak high levels around 1967-69, declined somewhat around 1970-72, and then increased till 1974-75. But never did the indices come down to the level of the early sixties during these 15 years.

(ii) From 1975-76 till 1982-83 (the latest year for which farm harvest price data are available to us) there was a visible decline in the terms of trade index. However, all crops do not show the same trend. The index for cereals, i.e., rice, wheat,

jowar, bajra, ragi and barley showed a downward trend. The millets and *ragi* in most States in most years, and particularly in the years of the eighties showed an index lower than 100, meaning thereby that the commodity terms of trade index had become distinctly unfavourable to these crops compared to the early sixties. The index for rice became distinctly unfavourable in the eighties (1980-83) in all States, while in some States like Punjab, Bihar and Assam it was so since 1976-77. Similarly, the index for wheat showed that the terms of trade for farmers since 1975-76 had fluctuated around 100, but became distinctly unfavourable in the eighties.

(iii) As against the cereals, the pulses, and cash crops like oilseeds, sugarcane and cotton did not exhibit unfavourable terms of trade. Indeed the index, though fluctuating over the years, remained considerably above 100 for gram and groundnut, indicative of the position in regard to pulses and oilseeds in general. So was the position with regard to sugarcane. In regard to cotton, the index came almost to the level of the sixties in a few States like Karnataka and Haryana in the late seventies and early eighties, but never showed a distinctly persistent unfavourable terms of trade.

(iv) The one crop showing very distinctly unfavourable terms of trade is jute. Its harvest price has highly fluctuated from year to year. But for most of the years since 1961-62, the terms of trade index has been below that of the base year. The situation was persistently unfavourable in the seventies and declined further during the early eighties.

Before drawing conclusions about the changing pattern of terms of trade, it is necessary to turn our attention to the other part of the terms of trade, where the farm harvest price index is compared with the composite price index of items of household expenditure purchased from the non-farm sector (Table II). The picture that emerges on this account may be summarised as follows:

(a) The terms of trade of all crops, with reference to household purchases, moved up significantly for most crops till about 1968-69. But thereafter the index for most cereal crops declined in the beginning of the seventies (1970-72), almost to the level of the base period in the beginning of the sixties. Subsequently, till 1974-75 there was a fresh upward spurt. But after that for many cereals, and after 1977-78 for all cereals in all States, the index declined sharply to the level of the beginning of the sixties, or even lower than that.

(b) In regard to pulses and most of the traditional cash crops like oilseeds and sugarcane, the terms of trade have remained consistently higher than in the beginning of the sixties, despite considerable fluctuations from year to year.

(c) The index for cotton shows sharp fluctuations over the two decades, and cannot be said to have remained consistently higher than in 1961-62, though it does not show any persistent unfavourable trend either. Jute, on the other hand, not only showed great fluctuations, but also unfavourable trend in more recent years.

We may now make an attempt to read the two indices together, in order to judge what might have happened to the farmers growing different crops in the different States during the last two and half decades.

Compared to the beginning of the sixties, the commodity or barter terms of trade of farmers increased very significantly upto 1968-69. After that there was a decline. This decline was more in relation to the index involving household expenses than that involving farm inputs, and more for cereals than for other crops. Therefore, one may infer that farmers growing cereals using little inputs purchased from the non-farm sector saw their terms of trade decline to near the position of the early sixties. Farmers growing

other cereals with significant purchased inputs, as well as those growing pulses and cash crops had still favourable terms of trade.

Both the terms of trade of all farmers again improved upto 1974-75. But after that and particularly after 1978-79, the terms of trade of all cereals declined to the level of the early sixties or even lower. The favourable terms of trade of pulses and most cash crops like oilseeds, sugarcane, however, continued with fluctuations and at a somewhat lower level than in the later parts of the sixties.

This overall picture shows that during the period 1961-62 to 1982-83, the barter terms of trade of farmers did not show either a continuous rise or a continuous decline. There was a steady all-round rise till about 1968-69, then a decline, in case of certain crops almost to the 1961-62 level in 1970-72, then again a sharp rise till 1974-75, and after that a general decline, often to the 1961-62 level, or even lower, particularly in the case of cereals.

It is well understood that the barter terms of trade are not a safe guide to the changing real income position of the farmers, because it does not encompass the technological changes in agriculture affecting per acre yields, the changing crop mix in farms and the changing size of holdings. The income terms of trade can be expected to catch the first two of these three factors. Absence of relevant data prevents us from trying to build up such a time-series for various crops or regions. However, it is possible to make a few qualitative statements on the matter.

The high barter terms of trade during the middle of the sixties for all crops coincided with the steep fall in farm production and widespread famine conditions during 1965-67. Therefore, one can say that the high barter terms of trade during this period cannot be interpreted to mean improved real income position of the farmers in

most regions. The high terms of trade during the subsequent two or three years, however, indicated distinctly improved income position. This was much more so for those farmers who switched over to the new high-yielding variety (HYV) of wheat and rice.

The decline in the index in 1970-72 was more noticed in the case of cereals, but this was more on account of the greater rise in the price of non-farm consumables purchased by the rural households. Therefore, farmers who produced cereals with very little non-farm inputs (like fertilizer, water, etc.) may be said to have suffered a decline in their real income position, back to the level of the early sixties. The producers of millets, *ragi* as well as rice in major rice growing regions, like eastern India, as well as wheat producers outside the northern belt, may be said to fall in this category.

The subsequent all-round rise in the farmers' terms of trade till 1974-75 was more due to the inflationary conditions prevailing in the country, than the drought conditions in some parts. This upsurge also saw both a spurt and consolidation of the new HYV technique in regard to cereals. Surely, farmers of most crops in most parts of the country, except those subjected to drought, may be presumed to have benefited in their real income position.

The situation changed after 1974-75, essentially because of the sharp rise in the price of farm inputs, and the anti-inflationary measures adopted soon after this year. There was a general decline in the index of terms of trade for all crops; but it was most noticeable for all cereals including wheat and rice. The situation persisted till 1983, the last year for which data are available to us. This decline; however does not represent a worsening of the real income position of all cereal farmers in all States. Thanks to the new seed technology, the farmers producing these crops

found that compared to the pre-HYV period they needed a smaller portion of their output to buy the new inputs than before, thus indicating a growingly favourable real income situation. This was the position till 1974.⁵ After 1974, available cost and return data for crops like wheat and rice suggest that in the HYV regions, despite increased proportions of the produce being used to buy the inputs, the farmers, thanks to higher per acre yields, were left with either the same output, as in the case of wheat, or with larger output, as in the case of rice, than before 1974. This suggests that despite unfavourable barter terms of trade during the last some years, the wheat and rice farmers in these HYV regions were not only in a better income position compared to the early sixties, but were certainly not in an inferior position compared to the pre-1974 position. This is broadly the situation in regard to the Punjab, Haryana, Uttar Pradesh, and rice areas of Andhra Pradesh and Tamil Nadu.

The same, however, cannot be said about the rice growing eastern India, (i.e., Bihar, Assam, West Bengal, and presumably Orissa, as well as the rice region of Madhya Pradesh) which has recorded a declining barter terms of trade for rice, its most important crop (except West Bengal), but no significant upward trend in per hectare yield of rice. It is well-known that the new variety of paddy seeds has still to make any impact on the main winter paddy in these States; the real change is noticed only in summer paddy in these regions, which, unfortunately, is very limited in area due to limited irrigation facility. It means, therefore, that the declining barter terms of trade for rice farmers in this region in the late seventies and early eighties also indicate a declining real income position or at best a stagnant one compared to the early sixties.

The same appears to be the situation with regard to the jowar, bajra and *ragi* farmers who account for the bulk of the unirrigated farms in the dry agricultural region of peninsular India. Their barter terms of trade have deteriorated in the late seventies and early eighties, and their per hectare yields have not registered any significant increase during the period, suggesting thereby an adverse income terms of trade compared to the early sixties. This is more likely to be the case with regard to *rabi jowar* than *kharif jowar* and bajra which have recorded some increase in yield rates due to adoption of hybrid seeds.

The producers of pulses and oilseeds have obviously not suffered any loss in real income position but rather gain in it, though fluctuating, almost entirely due to favourable barter terms of trade, since these crops have not registered any noticeable rise in yield rates. The position of sugarcane growers is similar in that while the barter terms of trade have remained favourable, the yield rates have either increased or remained unchanged, implying an improvement in their real income position.

It is difficult to say anything even in such general terms about cotton, since the trend in prices as well as yield rates of distinctly different varieties have surely not been the same, but time-series data for these are not readily available.

Jute is a particularly unfortunate crop since its barter and income terms of trade appear to have declined during the last decade or so. If the farmers have continued to produce this, it is apparently because there is no alternative to the use of most of this land, on which transplanted paddy follows jute most of the time.

This rather long review of the changing terms of trade in relation to different crops in various States and their impact on the farmers' real

5. A. Mukhopadhyaya: Inter-Regional Variation in Cost and Production and Relative Profitability of Some Major Crops in India, Ph. D. Thesis, University of Poona, Pune, 1980-81.

income situation appears to us instructive. The two opposing perceptions of a steadily favourable terms of trade for farmers on the one side, and of worsening terms of trade all-round, on the other, appear untenable. The picture is a mixed one, type-of-farmingwise and regionwise. The northern irrigated regions as well as the coastal deltas have seen distinct improvement in the farmers' real income position not only compared to the early sixties but also compared to the early seventies, though in the later period it has seen a smaller improvement compared to the earlier period. As against this, the unirrigated agricultural regions of peninsular India and the entire eastern Indian region have seen stagnation and some marginal deterioration in the late seventies and early eighties, preceded by some favourable trends till the early seventies.

The reasons for this may not be far to seek. Regions which have seen rapid growth of perennial irrigation facilities and successful adoption of new high-yielding seeds have been able to improve their position even in the face of declining terms of trade in recent years. The other regions have stagnated or suffered due to the absence of these basic conditions.

Can price policy change this situation? The evidence suggests that price policy can play only a very limited role in this context. That, merely favourable or rising barter terms of trade cannot deliver the goods is indicated by the fact that while the barter terms of trade of pulses and oilseeds have been continuously favourable over the last two decades, often rising quite high, it has resulted in no significant increase in production of these crops. If anything, wherever it was possible to switch over such lands to the new HYV crops, it has been done. The major source of change has to be in the provision of irrigation and biotechnological improvement.

The dry agricultural farmers of peninsular India, growing unirrigated jowar, bajra, *ragi*, groundnut and cotton, have yet to be favoured with irrigation water which can change their income and lives. These potentially water-short regions are today characterized by uneconomic use of water which at the same time limits the area of land and the number of farmers benefited. A change in the use of such water can not only help produce more per unit of water than at present, but also enable the use of more productive seeds and crops than at present. Irrigation can greatly increase productivity of millets as well as pulses, oilseeds and cotton. Indeed, extension of irrigation may lead, usefully, to a decline in the area under millets, since with increased production of rice and wheat the relative price of millets will continue to be under pressure. Today these farmers have no choice; if denied irrigation for long their real income position will deteriorate simply because of the better performance of wheat and rice in the green revolution belt.

The eastern Indian rice regions hold great potentialities provided perennial irrigation facility and suitable high-yielding paddy varieties and other crops can be developed for the winter paddy lands. The matter is complex, and mere favourable terms of trade cannot do the trick.

But this does not mean that the terms of trade have no relevance in this context. While very favourable terms of trade by themselves cannot provide great incentives to greater production,⁶ unfavourable or declining terms of trade cannot create the necessary conditions for adoption of better techniques and higher production. One may recollect that, thanks to the liberal supply of wheat under P. L. 480 and its distribution at fixed unchanging price all over the country, the price of wheat relative to the general price level was

6. Raj Krishna: *Agricultural Growth, Price Policy and Equity*, The World Bank, Washington, D. C., January, 1982, quoted in Kahlon and George, *op. cit.*, p. 199. Raj Krishna reports a positive but small response of aggregate farm output to terms of trade of farmers, and concludes that "a favourable price environment is essential for agricultural growth."

declining during the early sixties. This situation, however, sharply changed in 1965-66 due to the severe shortfall in agricultural production and the simultaneous closure of the P. L. 480 tap. Relative price of wheat improved, and this coincided with the introduction of the HYV wheat seed. It is a matter for speculation if the new seed technology would have been adopted as fast and as widely if the price had not improved and been supported by the-Agricultural Prices Commission that came into existence at the time. It is not proper to believe that eastern India will adopt any new techniques rapidly in the face of deteriorating terms of trade of most crops grown there. Policy, therefore, should ensure that the terms of trade are not allowed to deteriorate when one is planning and executing new techniques and crops for the region.

This implies that one can think in terms of a somewhat differential price policy for certain crops, like rice in eastern zone, millets in peninsular India, than in more developed region. The present price situation in the developed agricultural regions does not appear to have led to deteriorating income terms of trade of farmers not only with reference to the pre-HYV period of the early sixties, but also compared to the much better income position of the early seventies. The only caution one may advocate here is to ensure that the emerging price situation there does not lead to deterioration in the income terms of trade. In the other regions, however, where declining barter terms of trade indicate also declining income terms of trade, in the prevailing price situation, it appears necessary and advisable to prevent this from happening in the interest of greater acceptance of newer techniques. If this implies marginally higher procurement/support price (and now the two are the same) of paddy or

rice or millets in the more agriculturally undeveloped regions, this may be considered both necessary and desirable.⁷

The fixation of support price appears to have neglected these considerations. In the first place, the effort is to fix a single price for a crop for the whole country. Our examination of the data would suggest that this is not equally fair for every region. A regionally differential support price, so fixed that the price difference between any two regions does not exceed the transport costs, would be useful. Secondly, examination of the procurement prices over the years show that the increase in procurement prices kept pace with the rise in price of farm inputs, but not necessarily with the rise in the price index of household commodities purchased by the farm sector. Since many of the commodities in the relatively under-developed regions involved little inputs from the non-farm sector, the relevant prices to compare with, in their case, would be the prices of consumables purchased by the farm households. It would be necessary to keep this in view in fixing support prices for such crops. Today the object of agricultural price policy is to provide a support price to farm products against sharp fluctuations in the market, and not Compulsorily buy a part of the produce for sale at subsidised prices. Support in this context must take changing prospects of both demand and supply into account. While doing so, it has to take the changing income terms of trade into consideration so that farmers do not suffer a loss in real income.

It may not be out of place to mention here that in these under-developed agricultural regions one sometimes finds farmers selling their produce at prices lower than the announced support price,

7. The problem of jute requires special attention. Till 1977-78 the farm harvest price of raw jute appears to have generally kept pace with the wholesale price of jute manufactures. Therefore, the rather depressed terms of trade may be a reflection of the conditions of demand affecting jute manufactures. However, after 1977-78 the farm harvest price of jute appears to be steadily lagging behind the wholesale price of jute manufactures. Whatever the reason, it raises a question about the appropriate support price for jute.

simply because there is no official agency to buy at the stated price. If failure to take such elementary precaution persists, all other advocacy on price policy shall be no better than paper exercises.

In the absence of technological improvement, mere favourable barter terms of trade will amount to only increasing the rental component in farm income. This surely cannot be the solution to the problem of stagnant income of the agricultural sector in India, though the advocacy of state-run agricultural cartels will amount to that. A fair deal to the farm sector will have to start with a fair deal to the farm labourers, and small and marginal farmers who are also mainly wage workers. This can be done not only by ensuring at least a subsistence minimum wage in agricultural operation, but also by providing such workers with wage work at this wage rate for the remaining days of the year. This can be effectively achieved, like in the case of enforcement of support price for farm products, by the state guaranteeing employment at the minimum wage rate to whoever wants it in the countryside. An effective minimum wage rate, enforced in this manner, should be able to ensure a better income for farm labourers. It will influence farm product prices in two ways: In the first place, higher wage rates for wage labour, and consequently, a higher opportunity cost for family labour, would get reflected in the cost of production of farm products, and therefore in their support as well as market prices. Secondly, higher income of agricultural labourers will create greater demand for farm products, particularly cereals, thereby helping to keep up prices. Today one sees the extraordinary spectacle of the state carrying a buffer stock of 29 million tonnes of foodgrains while half the rural households is found to be too poor to afford even enough food every day of the year. Improved real income for such people therefore shall be twice blessed.

Of course, a somewhat higher farm product price can be offset by a corresponding rise in non-farm prices, through not only a rise in the cost of inputs from the farm sector but also arise in the non-farm salaries and wages. Persistent price adjustments in this manner can only set inflationary spiral in motion, and prove self-defeating. Therefore, it is necessary to acknowledge that the question involved is one of fair distribution of income in the society between the farm and non-farm sector. A proper wages and incomes policy for our society, so often advocated, must have this as one of its important goals. In our anxiety to please everyone, we must not forget that, in the context of a dynamic economy, giving a somewhat higher portion of the incremental income to the under-privileged must mean a much smaller share of the incremental to the others. It is useful to remind ourselves that the country has adopted a policy, however unevenly and haltingly implemented, of putting a ceiling on land holdings. Given the present available technology, a dry farmer in Maharashtra, for example, with a ceiling on land holding of 54 acres for his family, cannot get more than Rs. 20,000 a year as net income from his farm (net of out of pocket expenses), in a normal year. And that is the exemption limit for non-farm income for income-tax purposes. Irrigation surely opens up greater opportunities. But the fact of the matter is, there is a policy for the farm sector. This needs to be strengthened with a policy relating to the wage labourers in that sector. But there is no policy today relating to the non-farm sector *vis-à-vis* the farm sector. Surely, one cannot pretend that this is not relevant.

The debate on farm price policy in India has suffered from rather extreme and therefore rather simplistic stands. The problems are more complex, both in the regional and temporal sense. The major thrust has to be in the direction of creation of new resources and techniques and appropriate policy frame for their economic utilisation. Price policy can play a positive but limited role in this

context. A regional and cropwise differential support price policy would appear to be necessary and useful, if judiciously formulated. The wider question of a fairer distribution of income requires a more comprehensive incomes policy than mere

higher prices for farm products. A careful understanding of these problems and Implications should be a first necessary step in the formulation of appropriate policies.

Table 1. Index of the Ratio of the Index of Farm Harvest Prices of Individual Crops to the Composite Index of the Prices of Inputs Purchased by the Farmers from the Non-Farm Sector for Each Crop in Different States
(1961-62=100)

Year	(a) Bihar						(b) Uttar Pradesh		
	Autumn paddy	Winter paddy	Wheat	Maize	Jute	Sugarcane	Barley	Wheat	Paddy
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1961-62	100	100	100	100	100	100	100	100	100
1962-63	103	108	82	93	65	112	91	99	103
1963-64	105	113	107	95	72	158	132	129	97
1964-65	138	125	154	165	104	160	158	167	140
1965-66	208	175	166	191	116	140	172	164	182
1966-67	145	254	211	214	122	185	252	253	224
1967-68	254	222	134	238	84	319	159	157	208
1968-69	150	147	133	148	144	197	143	155	150
1969-70	140	151	136	148	95	142	154	168	147
1970-71	143	147	117	133	120	134	123	137	138
1971-72	132	135	112	163	88	204	137	134	134
1972-73	144	153	138	161	96	234	175	135	154
1973-74	182	224	186	205	72	229	212	195	162
1974-75	183	148	111	189	78	158	164	146	152
1975-76	106	97	78	115	51	132	77	92	95
1976-77	116	119	91	110	64	140	103	108	97
1977-78	135	116	89	140	74	138	115	113	118
1978-79	115	168	89	126	81	129	102	106	116
1979-80	111	140	96	137	73	238	118	107	141
1980-81	96	102	86	112	50	148	103	92	107
1981-82	84	110	85	111	42	149	88	92	100
1982-83	120	131	103	125	62	125	103	99	110

(Contd.)

TABLE I (Contd.)

Year	(c) West Bengal			(d) Andhra Pradesh					
	Autumn paddy	Winter paddy	Wheat	Paddy	Jowar	Ground-nut	Cotton	Sugar-cane	Tobacco
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1962-63	104	124	107	95	92	94	125	132	101
1963-64	114	132	125	100	101	98	116	180	100
1964-65	120	138	132	115	136	138	119	202	120
1965-66	143	164	167	119	136	192	141	200	113
1966-67	170	199	175	118	135	206	149	295	114
1967-68	193	216	192	127	130	134	141	529	131
1968-69	165	184	143	147	131	150	132	262	167
1969-70	159	173	139	121	151	169	162	174	159
1970-71	164	176	160	117	151	163	192	244	154
1971-72	163	189	235	135	136	146	173	267	143
1972-73	164	182	246	156	146	207	175	325	136
1973-74	233	217	219	146	136	222	275	261	136
1974-75	168	141	140	120	160	181	130	299	101
1975-76	127	184	126	89	99	93	106	192	97
1976-77	129	140	153	103	110	157	181	206	164
1977-78	124	123	140	102	102	142	145	145	98
1978-79	124	136	132	95	85	132	162	154	149
1979-80	132	156	115	103	82	154	153	302	153
1980-81	110	110	98	92	88	164	146	287	139
1981-82	104	121	109	91	91	149	130	183	135
1982-83	--	141	120	95	82	154	114	158	123

(Contd.)

TABLE I. (Contd.)

	(e) Assam		(f) Kerala	(g) Tamil Nadu				
	Paddy	Rapeseed and mustard	Paddy	Rice	Jowar	Groundnut	Cotton	Sugarcane
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1962-63	104	99	93	90	92	92	114	187
1963-64	105	90	101	108	100	98	114	175
1964-65	113	97	151	112	120	123	120	161
1965-66	128	102	191	120	114	164	120	156
1966-67	158	114	210	108	110	160	144	220
1967-68	169	141	246	104	107	143	124	179
1968-69	181	135	194	102	148	140	139	176
1969-70	148	130	189	127	143	184	142	149
1970-71	118	145	148	120	129	160	165	199
1971-72	135	117	160	122	129	153	149	219
1972-73	109	128	181	116	128	158	142	237
1973-74	168	152	258	141	155	216	147	201
1974-75	156	110	213	--	191	247	87	130
1975-76	95	77	147	--	102	171	97	139
1976-77	99	125	125	--	114	204	142	164
1977-78	107	132	118	99	103	207	145	121
1978-79	101	137	112	104	80	86	138	132
1979-80	107	124	115	117	78	158	105	--
1980-81	103	138	99	100	78	136	96	212
1981-82	93	111	104	101	85	139	100	100
1982-83	101	105	118	99	74	158	89	97

(Contd.)

TABLE I. (Contd.)

Year	(h) Karnataka				(i) Maharashtra			
	Jowar	Ragi	Groundnut	Cotton	Jowar	Bajra	Cotton	Sugarcane
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1962-63	92	82	92	102	104	99	121	141
1963-64	101	92	106	109	115	103	132	204
1964-65	142	173	136	117	121	154	142	200
1965-66	167	235	181	108	143	205	118	163
1966-67	136	181	208	164	136	155	139	298
1967-68	139	173	140	120	126	161	69	417
1968-69	--	154	142	130	130	143	110	259
1969-70	109	133	160	144	126	138	108	158
1970-71	-	120	157	169	144	120	128	189
1971-72	117	117	128	132	150	128	127	258
1972-73	159	150	189	144	177	189	138	331
1973-74	143	179	227	193	229	133	226	253
1974-75	137	154	124	94	182	134	114	201
1975-76	93	75	82	88	136	105	89	164
1976-77	105	123	143	139	120	97	86	172
1977-78	85	95	145	116	110	104	174	148
1978-79	77	81	122	107	108	90	144	129
1979-80	77	83	152	106	104	85	142	
1980-81	85	102	147	104	110	87	146	256
1981-82	78	93	142	88	96	76	132	138
1982-83	67	90	144	88	96	76	126	132

(Contd.)

TABLE I. (Contd.)

	(j) Gujarat				(k) Madhya Pradesh				
	Bajra	Jowar		Ground-nut	Rice	Jowar	Wheat	Gram	Cotton
		<i>Kharif</i>	<i>Rabi</i>						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1962-63	99	93	--	91	78	97	89	87	101
1963-64	116	102	--	100	91	119	110	127	105
1964-65	150	131	--	111	110	131	129	117	117
1965-66	164	146	--	152	117	126	123	124	115
1966-67	171	148	--	174	131	128	141	123	130
1967-68	147	148	132	119	152	138	160	153	117
1968-69	149	149	144	132	149	138	151	153	113
1969-70	141	152	163	163	138	170	159	176	135
1970-71	97	132	116	158	125	150	131	130	191
1971-72	108	119	140	144	125	154	132	143	137
1972-73	160	172	185	170	140	148	139	199	135
1973-74	148	195	190	211	160	228	196	265	163
1974-75	168	188	--	146	154	186	146	184	115
1975-76	96	97	--	93	118	107	91	110	93
1976-77	99	102	--	109	118	115	116	122	169
1977-78	109	107	--	135	124	122	122	175	144
1978-79	107	100		145	114	111	110	163	124
1979-80	97	99	--	158	150	111	125	169	116
1980-81	99	IGO	--	158	108	111	114	222	127
1981-82	88	86	--	121	104	100	99	146	126
1982-83	89	96	--	162	122	102	115	132	97

(Contd.)

TABLE I. (Contd.)

	(l) Punjab					(m) Haryana				
	Paddy	Wheat	Maize	Cotton (American)	Sugar- cane	Paddy	Wheat	Gram	Bajra	Cotton American
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
1962-63	88	101	91	81	116					--
1963-64	76	115	104	86	197	--				--
1964-65	133	131	141	106	178	--				--
1965-66	106	150	151	120	112				--	
1966-67	116	170	199	155	195	124	205	203	166	125
1967-68	106	150	150	133	400	127	139	173	155	117
1968-69	109	129	133	112	223	119	157	193	147	132
1969-70	109	138	121	123	151	112	158	182	137	143
1970-71	105	131	117	196	143	112	138	151	89	172
1971-72	103	126	118	184	205	112	141	166	108	183
1972-73	95	120	114	183	247	153	135	236	187	188
1973-74	104	154	117	177	192	116	155	275	156	183
1974-75	130	104	156	5	143	85	112	225	131	134
1975-76	73	91	83	87	126	81	96	103	81	90
1976-77	96	104	101	147	143	81	103	130	82	147
1977-78	99	106	128	164	134	87	106	154	91	156
1978-79	86	106	120	96	73	86	107	171	81	137
1979-80	86	102	116	111	174	82	102	212	102	122
1980-81	75	90	106	112	180	79	91	237	94	113
1981-82	64	85	99	126	141	68	92	181	83	110
1982-83	74	87	113	108	140	76	92	163	81	108

(Contd.)

TABLE I. (Concl.)

Year	(n) Rajasthan					
	Jowar	Bajra	Wheat	Maize	Gram	Rapseed and mustard
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1962-63	88	93	95	97	118	101
1963-64	106	113	114	112	154	118
1964-65	126	128	128	140	179	148
1965-66	130	146	159	168	174	166
1966-67	158	154	207	196	216	179
1967-68	129	135	151	145	184	139
1968-69	139	144	162	174	207	133
1969-70	148	144	163	155	210	147
1970-71	118	95	129	126	167	145
1971-72	132	95	137	129	185	146
1972-73	144	136	156	159	217	165
1973-74	183	139	181	234	330	166
1974-75	195	197	151	226	247	129
1975-76	117	99	91	102	129	80
1976-77	110	92	106	105	163	151
1977-78	119	118	109	138	200	141
1978-79	112	104	107	125	197	140
1979-80	106	100	105	127	219	122
1980-81	94	91	94	118	266	130
1981-82	88	98	97	119	209	115
1982-83	90	89	90	108	185	90

(Contd.)

Table II. Index of the Ratio of the Index of Farm Harvest Price of Produce Received by Farmers to the Index of Prices Paid by Rural Households for Goods of Households Consumption Purchased from the Non-Farm Sector in Different States

(1961-62=100)

Year	(a) Andhra Pradesh						
	Paddy	Jowar	Ragi	Tobacco	Groundnut	Cotton	Sugarcane
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1961-62	100	100	100	100	100	100	100
1962-63	89	90	100	95	92	117	131
1963-64	91	95	86	108	92	102	176
1964-65	99	123	122	100	126	99	187
1965-66	94	115	127	120	158	109	164
1966-67	90	110	128	113	167	112	238
1967-68	102	107	126	145	116	113	469
1968-69	119	109	111	136	126	101	223
1969-70	96	93	97	130	138	119	144
1970-71	91	95	92	117	133	142	195
1971-72	102	116	105	113	177	122	207
1972-73	104	112	107	108	154	116	232
1973-74	96	98	108	101	156	177	182
1974-75	115	149	140	81	172	123	198
1975-76	93	103	91	150	99	110	206
1976-77	89	99	95	143	142	168	184
1977-78	90	92	88	86	129	136	131
1978-79	76	73	72	120	112	150	127
1979-80	78	71	73	117	129	130	227
1980-81	84	85	83	126	153	146	264
1981-82	92	95	90	144	155	141	188
1982-83	91	82	85	117	153	122	155

(Contd.)

Table II. (Contd.)

Year	(b) Bihar								
	Rice	Maize	Ragi	Wheat	Gram	Sugarcane	Tobacco	Rapeseed and mustard	Jute
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1961-62	100	100	100	100	100	100	100	100	100
1962-63	98	87	89	78	97	73	103	103	69
1963-64	93	84	86	96	122	141	75	106	64
1964-65	17	140	143	132	167	138	122	142	89
1965-66	167	153	136	136	156	112	116	154	95
1966-67	173	160	146	159	201	138	89	131	93
1967-68	215	200	194	113	177	267	98	118	71
1968-69	133	126	117	114	146	168	83	124	122
1969-70	117	122	112	113	161	117	119	135	78
1970-71	115	105	107	93	125	105	59	137	97
1971-72	105	124	115	85	129	154	112	139	69
1972-71	107	118	106	101	157	168	85	124	73
1973-74	119	134	106	123	205	149	92	217	48
1974-75	192	196	178	114	184	162	104	145	78
1975-76	17	124	132	84	140	142	126	104	55
1976-77	99	93	93	77	127	117	103	154	55
1977-78	115	118	103	75	174	116	94	161	63
1978-79	93	100	86	72	177	102	101	148	67
1979-80	82	101	83	73	169	176	98	158	58
1980-81	86	102	87	79	215	136	93	166	46
1981-82	86	114	125	88	209	155	94	167	43
1982-83	117	123	114	102	181	123	85	154	62

(Contd.)

Table II. (Contd.)

Year	(c) Gujarat							
	Paddy	Jowar	Bajra	Wheat	Gram	Tobacco	Groundnut	Cotton
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1961-62	100	100	100	100	100	100	100	100
1962-63	80	91	90	89	83	83	86	92
1963-64	-	97	105	104	92	93	92	93
1964-65	-	126	134	122	164	109	100	83
1965-66	-	129	130	105	276	113	126	101
1966-67	-	116	122	120	193	111	126	81
1967-68	140	116	108	102	123	111	93	81
1968-69	157	128	121	114	127	94	113	'108
1969-70	140	129	114	99	147	134	139	113
1970-71	102	114	75	86	117	171	130	142
1971-72	99	92	77	86	101	129	110	103
1972-73	128	134	106	101	119	99	121	110
1973-74	151	139	99	110	163	99	144	118
1974-75	183	161	144	113	155	134	139	100
1975-76	97	97	81	98	107	132	96	97
1976-77	82	92	82	77	97	64	97	125
1977-78	90	105	98	92	147	70	129	111
1978-79	90	93	86	82	149	75	125	96
1979-80	86	87	75	73	131	57	117	83
1980-81	96	91	88	77	188	76	136	-
1981-82	100	91	90	85	160	104	121	-
1982-83	109	97	-86	88	132	91	152	-

(Contd.)

Table II. (Contd.)

Year	(d) Karnataka						
	Jowar	Ragi	Wheat	Gram	Tobacco	Groundnut	Cotton
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1961-62	100	100	100	100	100	100	100
1962-63	84	81	89	--	99	91	100
1963-64	94	83	84	115	64	95	96
1964-65	127	150	84	187	66	118	98
1965-66	140	192	157	189	42	147	86
1966-67	105	136	141	136	42	156	118
1967-68	115	141	130	--	55	115	98
1968-69	111	131	125	135	36	122	171
1969-70	92	111	97	150	17	134	116
1970-71	99	99	96	116	82	130	132
1971-72	95	93	87	119	77	102	98
1972-73	114	112	104	176	71	142	101
1973-74	108	123	135	204	34	155	127
1974-75	131	151	108	165	58	122	94
1975-76	97	79	77	115	74	87	94
1976-77	95	111	94	104	82	128	130
1977-78	78	87	91	165	43	130	110
1978-79	66	70	82	141	45	102	94
1979-80	62	67	77	145	57	119	87
1980-81	80	97	106	207	35	135	102
1981-82	83	100	93	166	68	150	97
1982-83	69	92	97	139	56	143	94

(Contd.)

Table II. (Contd.)

Year	(e) Madhya Pradesh							
	Rice	Jowar	Bajra	Wheat	Gram	Tobacco	Groundnut	Cotton
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1961-62	100	100	100	100	100	100	100	100
1962-63	75	94	84	84	83	117	98	91
1963-64	81	101	85	100	120	142	89	91
1964-65	96	119	109	115	108	162	122	98
1965-66	94	107	110	101	106	166	157	90
1966-67	98	101	121	106	98	157	171	94
1967-68	125	113	124	130	125	140	129	90
1968-69	128	118	114	129	131	118	134	91
1969-70	119	114	118	134	149	121	151	107
1970-71	103	126	95	108	110	132	160	148
1971-72	97	127	92	104	118	115	130	102
1972-73	102	117	110	103	156	116	156	95
1973-74	107	167	114	136	196	100	167	108
1974-75	158	174	172	142	171	108	174	105
1975-76	129	110	90	96	94	125	114	93
1976-77	105	105	85	103	110	111	139	145
1977-78	112	116	114	111	166	111	161	127
1978-79	95	100	78	94	147	84	141	103
1979-80	107	94	94	96	144	70	146	86
1980-81	98	106	92	106	215	-	167	120
1981-82	108	108	107	103	159	-	186	134
1982-83	121	109	104	118	141	-	178	101

(Contd.)

Table II. (Contd.)

Year	(f) Maharashtra						
	Paddy	Jowar	Bajra	Wheat	Sugarcane	Groundnut	Cotton
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1961-62	100	100	100	100	100	100	100
1962-63	94	98	94	89	131	92	110
1963-64	124	105	95	116	196	94	113
1964-65	153	110	141	157	187	121	119
1965-66	169	120	173	112	135	151	93
1966-67	135	105	122	84	231	141	100
1967-68	140	102	131	94	338	124	55
1968-69	138	111	124	87	225	141	92
1969-70	127	107	119	80	148	162	91
1970-71	123	121	101	110	151	149	103
1971-72	119	122	103	103	193	126	95
1972-73	--	135	144	123	233	168	97
1973-74	--	165	121	154	220	176	147
1974-75	--	164	123	142	185	154	111
1975-76	--	141	109	112	168	123	81
1976-77	109	107	101	94	149	147	76
1977-78	108	103	99	100	135	147	159
1978-79	90	94	78	87	106	125	119
1979-80	85	85	68	81	-	133	107
1980-81	94	105	84	99	247	163	134
1981-82	103	104	82	102	149	166	136
1982-83	107	100	79	105	138	164	125

(Contd.)

Table II. (Contd.)

Year	(g) Punjab								
	Rice	Bajra	Maize	Wheat	Barley	Gram	Sugarcane	Groundnut	Cotton
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1961-62	100	100	100	100	100	100	100	100	100
1962-63	82	86	85	95	90	94	109	106	77
1963-64	72	93	96	106	111	117	187	103	80
1964-65	126	126	129	119	145	127	168	132	99
1965-66	91	112	129	128	160	149	97	190	104
1966-67	86	126	149	128	188	170	149	183	118
1967-68	83	109	117	117	116	140	312	114	103
1968-69	98	112	119	116	138	181	200	139	99
1969-70	99	119	110	124	128	169	136	154	122
1970-71	88	88	100	112	109	130	119	165	166
1971-72	80	83	94	99	99	153	157	127	145
1972-73	73	185	88	94	167	182	186	144	143
1973-74	79	119	86	114	157	230	145	168	134
1974-75	129	174	159	105	133	214	143	179	134
1975-76	78	91	91	99	77	112	131	122	94
1976-77	91	79	96	98	99	129	135	148	143
1977-78	99	91	126	103	79	162	133	199	167
1978-79	77	80	106	95	93	157	64	138	88
1979-80	70	72	91	80	95	182	140	136	94
1980-81	72	87	100	85	86	260	176	102	111
1981-82	72	104	110	94	93	226	159	228	144
1982-83	83	113	121	93	100	226	155	198	121

(Contd.)

TABLE II. (Contd.)

Year	(h) Rajasthan					
	Rice	Bajra	Wheat	Gram	Sugarcane	Rapseed and mustard
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1961-62	100	100	100	100	100	100
1962-63	105	90	91	115	145	97
1963-64	95	108	111	145	190	117
1964-65	122	122	123	169	149	146
1965-66	222	130	137	153	116	148
1966-67	218	125	166	175	208	147
1967-68	165	110	124	151	293	114
1968-69	156	125	141	181	191	116
1969-70	139	124	140	179	114	125
1970-71	130	81	104	142	106	119
1971-72	108	79	105	153	157	116
1972-73	116	108	114	172	151	125
1973-74	101	106	133	249	128	128
1974-75	185	181	142	229	133	118
1975-76	134	101	93	133	132	80
1976-77	117	85	97	153	129	140
1977-78	116	114	102	192	94	135
1978-79	110	96	92	182	84	126
1979-80	114	91	91	202	153	115
1980-81	121	91	94	266	166	134
1981-82	120	108	139	237	193	133
1982-83	119	106	108	223	203	112

(Contd.)

Table II. (Contd.)

Year	(i) Tamil Nadu								
	Rice	Jowar	Ragi	Bajra	Sugarcane	Groundnut	Sesamum	Cotton	Tobacco
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1961-62	100	100	100	100	100	100	100	100	100
1962-63	86	91	89	91	179	90	88	109	96
1963-64	100	102	87	95	166	98	96	110	145
1964-65	96	116	112	111	145	117	99	105	112
1965-66	91	113	120	107	121	136	120	94	117
1966-67	82	92	95	95	171	132	133	111	108
1967-68	89	93	96	96	238	123	118	102	88
1966-69	83	124	120	121	145	117	115	110	104
1969-70	101	113	105	109	117	259	126	108	90
1970-71	95	103	97	98	155	128	121	126	128
1971-72	93	103	98	92	165	121	120	110	145
1972-73	79	93	88	88	161	115	131	95	131
1973-74	95	119	116	106	141	163	140	101	116
1974-75	-	171	168	160	127	228	143	85	113
1975-76	-	97	82	99	140	166	111	98	171
1976-77	-	99	90	89	141	176	115	128	114
1977-78	87	93	84	93	106	186	116	134	93
1978-79	85	68	71	65	106	72	97	117	63
1979-80	88	68	74	64	-	141	109	87	74
1980-81	91	78	90	78	200	134	127	95	71
1981-82	102	94	96	88	104	151	143	108	64
1982-83	95	80	91	78	97	166	133	94	56

(Contd.)

Table II. (Contd.)

Year	(j) Uttar Pradesh							
	Paddy	Wheat	Barley	Gram	Sugarcane	Groundnut	Rapeseed and mustard	Cotton
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1961-62	100	100	100	100	100	100	100	100
1962-63	99	95	80	99	96	83	96	102
1963-64	91	122	117	131	118	100	110	89
1964-65	129	155	139	146	-	123	119	111
1965-66	156	141	137	147	-	138	131	115
1966-67	174	198	185	218	-	169	154	111
1967-68	170	129	119	150	-	130	111	110
1968-69	127	131	111	143	-	119	121	106
1969-70	129	147	122	167	117	145	132	109
1970-71	118	113	93	119	107	155	130	116
1971-72	105	105	98	136	119	110	127	118
1972-73	117	104	123	171	153	141	127	104
1973-74	117	148	152	238	133	181	182	119
1974-75	154	144	144	201	134	162	127	138
1975-76	104	100	82	-	-	-	-	-
1976-77	91	96	89	130	110	135	169	137
1977-78	112	106	113	186	104	145	165	160
1978-79	102	92	90	169	-	110	130	135
1979-80	113	87	101	173	-	143	148	96
1980-81	103	88	102	227	-	165	149	114
1981-82	112	103	101	198	-	140	131	150
1982-83	119	107	115	168	-	164	143	148

(Contd.)

TABLE II. (Concl.d.)

	(k) Assam	(l) Kerala	(m) West Bengal			
	Rice	Rice	Autumn rice	Winter rice	Wheat	Jute
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1961-62	100	100	100	100	100	100
1962-63	101	87	98	115	100	76
1963-64	94	93	99	114	109	93
1964-65	102	128	101	112	109	94
1965-66	111	157	114	126	130	97
1966-67	122	163	123	140	126	90
1967-68	134	204	157	173	157	79
1968-69	152	168	138	153	121	103
1969-70	121	158	129	140	114	99
1970-71	98	122	129	136	117	98
1971-72	111	128	122	137	105	91
1972-73	95	438	119	127	105	88
1973-74	107	178	112	133	153	70
1974-75	140	224	169	145	131	66
1975-76	95	159	135	113	94	55
1976-77	84	116	106	115	87	71
1977-78	95	105	102	101	88	71
1978-79	89	95	98	106	85	67
1979-80	90	89	92	102	77	58
1980-81	93	115	103	101	91	53
1981-82	91	113	113	129	116	58
1982-83	99	116	-	141	117	59

MADHAY PRADESH: SUMMARY OF THE COUNCIL OF MINISTERS - PRICE DEFICIT FINANCING SCHEME*

Subject: "Price Deficit Financing Scheme"

To enable the farmers of the state to obtain timely and proper value of their produce, for the farm produce sold by the farmer in the premises of the Designated Farmers' Market Committee at the Support Price for Kharif-2011 fixed by the State Government on pilot basis, and on adopting the working procedure laid down by the State Government, the farmer shall be provided in the form of subsidy, under the "Price Deficit Financing Scheme", an amount equal to the difference from the announced model sale price. After reviewing the implementation of the scheme for the Kharif of 2017, the decision regarding the continuation of the scheme on a permanent basis in relation to Rabi 2017-18 and subsequent crop cycles shall be made.

The purpose of the project is to make sure that the work is completed:

- 1) This scheme shall be called "Price Deficit Financing Scheme". The said scheme shall be implemented from Kharif 2017. Under

the said scheme, farmers shall be registered from 1 September, 2017, till 30 September, 2017.

- 2) The benefits of the scheme shall be available only to a farmer of Madhya Pradesh, for the farm produce produced by him and sold in the premises of the designated agricultural produce market committee, and shall be restricted to a sale of the produce to a specified limit of the productivity of Kharif 2017 crops over a period announced by the State Government.
- 3) In order to get the benefit under the "Price Deficit Financing Scheme", the farmers shall be required to register themselves from 1 September, 2017, to 30 September, 2017, on the portal prepared for payment under the Price Deficit Financing Scheme by Primary Agricultural Co-operative Society (which carry on e-commerce of wheat and paddy).
- 4) The said scheme shall be applicable to the following crops:-

(4.1)-

No.	Crop	Period of sale for Bhavantar Payment scheme	Two other states to calculate the model sale price
(1)	(2)	(3)	(4)
	Oilseeds		
1.	Soyabean	16 October to 15 December	Maharashtra, Rajasthan
2.	Groundnut	16 October to 15 December	Gujarat, Rajasthan
3.	Sesame Seed	16 October to 15 December	Orissa, Chhattisgarh
4.	Rama Sesame Seed	16 October to 15 December	West Bengal, Rajasthan
5.	Kusum	16 October to 15 December	Karnataka, Andhra Pradesh
	Food Grains		
6.	Corn	16 October to 15 December	Karnataka, Maharashtra
	Pulses		
7.	Moong	16 October to 15 December	Rajasthan, Maharashtra
8.	Urad	16 October to 15 December	Rajasthan, Uttar Pradesh
9.	Tur	1 February to 30 April	Maharashtra, Gujarat

* Translated from the original Hindi version available on Madhya Pradesh Government website. The original Hindi version alone should be considered to be authentic.

- (4.2) - Registration for all the above mentioned crops shall be done by the farmer from 1 September, 2017, to 30 September, 2017. Every farmer shall be provided Information of the Registration number on the portal.
- 5) Calculation of the sale price under the Price Difference Financing Scheme shall be made for the period specified, for the crops mentioned in the Table given in para-4, at the end of the said period, as stated below:
- (5.1) Model price for the period under reference in agricultural produce markets in Madhya Pradesh,
- (5.2) The "model" price in the two other relevant aforesaid states indicated by state government,
- (5.3) An average of the model sale prices of agricultural produce of the states of Madhya Pradesh and other two relevant states, as stated above, shall be calculated. It shall be up-loaded on the website of the Farmer Welfare and Agricultural Development Division, Government of Madhya Pradesh.
Note: Information about daily arrivals as well as prices, Web Portal of the Government of India (<http://agmarknet.gov.in>)
- 6) Requirements of the Scheme:
- (6.1) - Registration of the of the Beneficiary on the above-mentioned dedicated Portal apart from his/her being an original domicile (mool nivasi in Hindi version) of Madhya Pradesh. Farmers, whose names and information are not registered on the said portal within the above mentioned period, shall not be entitled to receive the benefit from the Scheme. At the time of the Registration on the Portal, the farmer's Aadhar Card number, Bank Account number, and Mobile number shall have to be given.
- (6.2) - The agricultural produce has to be that produced within the State only.
- (6.3) - The benefits of the Scheme shall be payable only on the sale of the produce in the notified mandi premises.
- 7) The State Government shall determine the State's Agriculture Produce Market Committee premises for providing the benefits of the Scheme by State Government, and the information of the same shall be made available to the general public.
- 8) The sale shall be carried out in the premises of the designated Agriculture Produce Market Committee, in accordance with the provisions of the bylaws of the Committee. The farmer as well as the Market Committee shall be required to complete the process in this regard as given below:
- (8.1) The farmer shall be required to make available to the Market Committee at the time of the sale, the registration number received on completing the Registration from 1 September, 2017 to 30th September, 2017.
- (8.2) In the contract sheet, weight sheet and the payment receipt to be issued on the conclusion of the auction/sale, the staff/officer nominated by the Agriculture Produce Market Committee shall, clearly write the farmer's name, amount, address, quantity sold, and the sale price, etc., and shall enter the farmer's Registration number. Information of those farmers, who provide their Registration numbers, shall be up-loaded by the Market Committee on its portal.

- (8.3) Every day, after the completion of the auctions in the Market Committee premises, the Mandi Secretary shall upload on Agmarknet portal of the Central Government, by 6 p.m., agricultural produce-wise information on the sales, arrivals and prices.
- (8.4) Daily information shall be compiled and uploaded by the Agricultural Produce Market Committee in the columns provided in the Registration Portal itself.
- 9) Upon completion of the due period of the Price Deficit Financing Scheme, the transfer to the farmer's account shall be made after adopting the further due procedure, by the concerned organisation, the Madhya Pradesh State Government Marketing Federation/ the Madhya Pradesh Civil Supplies Corporation. The district-wise agency for the Scheme shall be as prescribed in Annexure 1.
- (9.1) - The amount payable under the Scheme shall be calculated as follows:
- (a) If the sale of crops carried out by the farmer in the designated market committee premises is at a price higher than or equal to the minimum support price, then no amount shall be transferred to the farmer's account.
 - (b) However, if the farmer has carried out the sale of notified crops in the Market Committee premises at a price less than the Minimum Support Price but higher than the model sale price announced by the State Government, the amount equal to difference between the Minimum Support Price and the farmer's sale price shall be transferred to the farmer's account.
 - (c) If the sale price received by the farmer for a sale of a notified crop in the Market Committee premises is lower than the model sale price announced by the State Government, then amount equal to the difference between the Minimum Support Price and the model sale price announced by the State Government shall be transferred to the farmer's account.
- (9.2) - The amount of difference as stated above shall be payable on the quantity of sale by the farmer in the Market Committee premises but restricted up to a limit determined on the basis of the average productivity of the crop for the district for the cropped area. The Average Productivity for the district shall be calculated on the basis of the criteria applicable to the Prime Minister's Crop Insurance Scheme.
- 10) In order to avoid a Distress Sale by the farmer and to encourage him to sell the crops at the appropriate time, grants shall be provided under the Scheme to the farmers who have registered for keeping their agricultural produce in the Licensed Godowns.
- After the period specified under the price difference financing scheme in paragraph 4, on keeping the agricultural produce of soybean, groundnut, sesame seed, Ram sesame seed, kusum, corn, moong and urad for the four months' period from 1 January 2018 till 30 April 2018 and for toor from 1 May 2018 till 30 August 2018 in the licensed godowns, an amount for each notified crop, at the rate of Rs. 7 per quintal per month or the actual rent paid, whichever is less, shall be deposited in the accounts of such farmers. However, the said amount shall be payable only when the sale price shown in the payment sheet at the time of sale of the said crop happens to be less than the Minimum Support Price.
- After storage for four months or anytime during the four months' storage period if the agricultural produce is sold by the farmer at a price less than the Minimum

Support Price, no amount other than that prescribed in paragraph 13 shall be payable.

Registered farmers who wish to take the advantage of this provision shall submit an application to that effect, enclosing with it the Warehouse Holding Receipt (WHR), to the designated agency as per Annexure 1. The farmer shall be required to state his/her registration number in the application.

Madhya Pradesh State Agricultural Marketing Federation and State Civil Supplies Corporation shall audit and ascertain (co-ordinate) the physical verification. On the expiry of the period of four months of storage, after obtaining from the farmer the proof of sale, the payment shall be made at the above-mentioned rate into his bank account in case the sale price is not more than the minimum support price.

- 11) For the implementation of the Price Deficit Financing Scheme, Madhya Pradesh State Civil Supplies Corporation as well as Madhya Pradesh State Agricultural Marketing Federation shall be provided bank guarantees as per the requirement and the amount of expenditure incurred on the Scheme shall be re-financed. The concerned agency shall deposit the due amount in the farmer's account through Direct Benefit Transfer according to the rules/due processes of the Scheme. And it shall be the responsibility of the State Civil Supplies Corporation as well as the State Agricultural Marketing Federation to provide the information about the paid amount through an SMS sent to the farmer's mobile number in the required form.
- 12) Every year, after the distribution of the amount, the complete information about the payment shall be compiled and got audited as per the requirement by the State

Civil Supplies Corporation / State Agricultural Marketing Federation shall be set up by the Kriya Marketing Association and its every year Shall be updated as necessary.

- 13) The state government shall choose a nationally well-known governmental/semi- governmental institution and get Concurrent Evaluation of the Scheme conducted by it.
- 14) The District Collector shall monitor the Scheme continuously and shall set up a Control Room in the District Head Office for the purpose, which shall work from 9.00am to 6.00 p.m. The District level Control Room shall note all the problems associated with the Scheme and shall take all necessary actions for the solution of the same. Arrangements shall be made to take up special speedy actions in order to resolve/solve all the difficulties experienced by the farmers to receive payments under the Scheme. Extensive information about the Control Room shall be disseminated through print and electronic media at the district level.
- 15) For providing information about the Scheme to the farmers, detailed Circulars shall be prepared and issued in the print, electronic and social media at state level. This task shall be coordinated by the Directorate, Farmer Welfare and Agriculture Development Department.
- 16) An Agriculture Cabinet set up under the Chairmanship of the Honourable Chief Minister for the purpose of implementation of the Scheme shall continuously review the Scheme and take all the policy decisions.

- 17) The "State Level Action Committee" shall be set up under the Chairmanship of the Chief Secretary for the purpose of implantation of the Scheme.

1.	Chief Secretary	- Chairman
2.	Agricultural Production Commissioner	- Vice President
3.	Additional Chief Secretary, Finance Division	- Member
4.	Chief Secretary, Kisan Kalyan and Krishi Vikas Division (Farmer Welfare and Agriculture Development Division)	- Member
5.	Chief Secretary, Food processing Division	- Member
6.	Chief Secretary, Food and Supply Department	- Member
7.	Chief Secretary, Revenue Department	- Member
8.	Chief Secretary, Co-operation Division	- Member
9.	Vice-Chancellor, Jawaharlal Nehru Agricultural University, Jabalpur	- Member
10.	Vice-Chancellor, Rajmata Vijayaraje Sindhiya Agricultural University, Gwalior	- Member
11.	Managing Director, M.P. State Agricultural Marketing Board	- Member
12.	Director, Forest	- Member
13.	Managing Director	- Member
14.	Managing Director, State Agricultural Marketing Board, Bhopal	- Member
15.	Managing Director, State Warehousing and Logistics Corporation	- Member
16.	Director, Kisan Kalyan and Krishi Vikas (Farmer Welfare and Agriculture Development)	- Member

State Level Action Committee shall review the implementation, progress and the difficulties (complaints arising) in the daily implementation of the Scheme and shall take necessary decisions for successful implementation of the Scheme. For taking decisions on policy related subjects, the Committee shall present its Recommended

Agenda before the Agriculture Cabinet.

- 18) An Implementation Committee shall be set up at the district level as provided below: According to the level at the level of the level, the level of action officer is calculated:-

1.	District Collector	President
2.	Chief Executive Officer, District Gram Council	- Member
3.	Deputy Director, Kisan Kalyan and Krishi Vikas (Farmer Welfare and Agriculture Development)	- Member
4.	Deputy Commissioner, Co-operation	- Member
5.	District Food Officer	- Member
6.	Deputy/Assistant Director, Forest	- Member
7.	Lead Bank Officer	- Member
8.	Scientist In-charge, Krishi Vidnyan Kendra	- Member
9.	Secretary of the Agricultural Produce Market Committee posted in the District Office	- Member

The District Collector shall invite all the Honourable legislators from the district for the meetings of the District Implementation Committee as special invitees. Four farmers nominated by the Honourable Minister in charge of the District shall be special invitees for the meetings of District Implementation Committee. The Committee shall oversee proper conduct and progress of the Scheme in the district, payment to farmers, resolution of the disputes related to the Scheme, etc., and make recommendations to the State Government on various points related to the Scheme for consideration by the State Level Action

Committee, according to the sequence as per the instructions issued from time to time by the State Government.

- 19) After reviewing the working of the above mentioned Price Deficit Financing Scheme on a pilot basis during Kharif 2017, the revised Scheme for the crops in Rabi 2017-18 shall be separately announced through a Government Order.

Encl.: Annexure 1

**Chief Secretary Farmer Welfare and
Agricultural Development Division
Government of Madhya Pradesh, Bhopal**

Annexure 1
List of Districts Selected for the Price Deficit Financing Scheme as per the
Madhya Pradesh Government Resolution

No.	M.P. State Cooperative Marketing Federation Ltd. No.	No.	M.P. State Civil Supplies Corporation
(1)	(2)	(3)	(4)
1	Bhind	1	Gawalior
2	Muraina	2	Guna
3	Shyopurkalwa	3	Ashoknagar
4	Shivpuri	4	Indore
5	Datiya	5	Dhar
6	Zabua	6	Baitul
7	Alirajpur	7	Vidisha
8	Khargaun	8	Hoshangabad
9	Khandwa	9	Harda
10	Burhanpur	10	Balaghat
11	Badwani	11	Jabalpur
12	Ujjain	12	Mandla
13	Mandsaur	13	Chhindwada
14	Neemach	14	Sivani
15	Ratlam	15	Sagar
16	Dewas	16	Damoh
17	Shajapur	17	Tikamgarh
18	Aagar Malwa	18	Chatarpur
19	Bhopal	19	Panna
20	Sihore	20	Satana
21	Raisen	21	Seedhi
22	Rajgarh	22	Shahadol
23	Katani	23	Dindori
24	Narasinhapur	24	Anuppur
25	Reeva	25	Singaroli
		26	Umaria

Dated: 3.11.2017 **MINIMUM SUPPORT PRICES RECOMMENDED BY CACP
AND FIXED BY GOVERNMENT (CROP YEAR)**

Commodity	2009-10		2010-11		2011-12		2012-13		2013-14	
	Reco	Fixed	Reco	Fixed	Reco	Fixed	Reco	Fixed	Reco	Fixed
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Paddy Common #	950	1000@	1000	1000	1080	1080	1250	1250	1310	1310
Paddy (F) / Grade 'A'	980	1030@	1030	1030	1110	1110		1280	1345	1345
Jowar-Hybrid	840	840	880	880	980	980	1500	1500	1500	1500
Jowar-Maldandi	860	860	900	900	1000	1000		1520	1520	
Bajra	840	840	880	880	980	980	1175	1175	1175	1250
Ragi	915	915	965	965	1050	1050	1500	1500	1500	1500
Maize	840	840	880	880	980	980	1175	1175	1310	1310
Tur (Arhar)	2300	2300	2800	3000*	3100	3200*	4000#	3850	3850	4300
Moong	2760	2760	3170	3170*	3400	3500*	4500#	4400	4500	4500
Urad	2520	2520	2900	2900*	3300	3300*	4300	4300	4300	4300
Groundnut	2100	2100	2300	2300	2700	2700	3700	3700	4000	4000
Sunflower Seed	2215	2215	2350	2350	2800	2800	3700	3700	3700	3700
Soyabean Black	1350	1350	1400	1400	1650	1650	2200	2200	2500	2500
Soyabean Yellow	1390	1390	1440	1440	1690	1690	2240		2560	2560
Sesamum	2850	2850	2900	2900	3400	3400	4200	4200	4500	4500
Nigerseed	2405	2405	2450	2450	2900	2900	3500	3500	3500	3500
Medium Staple Cotton^	2500	2500	2500	2500	2800	2800	3600	3600	3700	3700
Long Staple Cotton^^	3000	3000	3000	3000	3300	3300	3900	3900	4000	4000
Rabi										
Wheat	1100	1100	1120	1120&	1285	1285	1285£	1350	1400	1400
Barley	750	750	780	780	980	980	980	980	1100	1100
Gram	1760	1760	2100	2100	2800	2800	3000	3000	3100	3100
Lentil (Masur)	1870	1870	2250	2250	2800	2800	2900	2900	2950	2950
Rapeseed/Mustard	1830	1830	1850	1850	2500	2500	3000	3000	3050	3050
Safflower	1680	1680	1800	1800	2500	2500	2800	2800	3000	3000
Other Commercial Crops										
Jute (TDS)	1575	1575	1675	1675	2200	2200	2300	2300	2400	2400
Sugarcane	139.12	139.12	145	145	170	170	210	210	220	220
Copra (Milling)	4450	4450	4525	4525	5100	5100	5100	5250	5250	5250
Copra (Ball)	4700	4700	4775	4775	5350	5350	5350	5500	5500	5500

(contd.)

Minimum Support Prices Recommended by CACP and Fixed by Government (Crop Year) (Concl.)

Commodity	2014-15		2015-16		2016-17		2017-18	
	Reco	Fixed	Reco	Fixed	Reco	Fixed	Reco	Fixed
(1)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
Paddy Common #	1360	1360	1410	1410	1470	1470	1550	1550
Paddy (F) / Grade 'A'	1400	1400	1450	1450	1510	1510	1590	1590
Jowar-Hybrid	1530	1530	1570	1570	1625	1625	1700	1700
Jowar-Maldandi	1550	1550	1590	1590	1650	1650	1725	1725
Bajra	1250	1250	1275	1275	1330	1330	1425	1425
Ragi	1550	1550	1650	1650	1725	1725	1900	1900
Maize	1310	1310	1325	1325	1365	1365	1425	1425
Tur (Arhar)	4350	4350	4425	4625+	4625	5050**	5250	5450e
Moong	4600	4600	4650	4850+	4800	5225**	5375	5575e
Urad	4350	4350	4425	4625+	4575	5000**	5200	5400e
Groundnut	4000	4000	4030	4030	4120	4220ö	4250	4450e
Sunflower Seed	3750	3750	3800	3800	3850	3950ö	4000	4100\$
Soyabean Black	2500	2500	-	-	2675	2775ö	2850	3050e
Soyabean Yellow	2560	2560	2600	2600	2675	2775ö		
Sesamum	4600	4600	4700	4700	4800	5000@@	5200	5300\$
Nigerseed	3600	3600	3650	3650	3725	3825ö	3950	4050\$
Medium Staple Cotton^	3750	3750	3800	3800	3860	3860	4020	4020
Long Staple Cotton^^	4050	4050	4100	4100	4160	4160	4320	4320
Rabi								
Wheat	1450	1450	1525	1525	1625	1625	1735	1735
Barley	1150	1150	1225	1225	1325	1325	1410	1410
Gram	3175	3175	3425	3425α	3800	4000μ	4250	4400%
Lentil (Masur)	3075	3075	3325	3325α	3800	3950μμ	4150	4250\$
Rapeseed/Mustard	3100	3100	3350	3350	3600	3700ü	3900	4000\$
Safflower	3050	3050	3300	3300	3600	3700ü	4000	4100\$
Other Commercial Crops								
Jute (TDS)	2700	2700	3200	3200\$\$	3500	3500		
Sugarcane	230	230	230	230	255	255		
Copra (Milling)	5550	5550	5950	5950	6500	6500		
Copra (Ball)	5830	5830	6240	6240	6785	6785		

ü: Including bonus of Rs. 100 per quintal.

α: Additional bonus Rs. 75 per quintal.

+ : Included Bonus Rs. 200 per quintal.

\$: Included bonus of Rs. 100 per quintal

e: Included bonus of Rs. 200 per quintal.

% : Included bonus Rs. 150 per quintal.

@ : Additional bonus of Rs. 50 per quintal.

* : Additional Bonus of Rs. 500 per quintal for market arrivals within the first two moths of harvesting.

^ : Staple length (mm) of 24.5-25.5 and micronaire value 4.3-5.1

^^ : Staple length (mm) of 29.5-30.5 and micronaire value of 3.5-4.3.1

& : Additional bonus of Rs 50 per quintal

£ : 10 percent bonus if exports are banned and in a revised recommendation bonus of Rs 40 per quintal subject to liquidation of 15 million tones of Central Pool stocks. The nomenclature SMP has been changed to Fair and Remunerative Price (FRP) since 2009-10, based on 9.5 percent recovery ratio.

: revised later to Rs 3850 per quintal for tur and Rs 4400 per quintal moong.

μ : including bonus of Rs 200 per quintal. μμ : Including bonus of Rs 150 per quintal.

** : Included bonus Rs 425 per Quintal. ö : Included bonus Rs. 100 per quintal.

@@ : Included bonus Rs 200 per quintal.

\$\$: MSP of TDN3 (equivalent to TD5 of old grading) grade of raw jute for 2016-17 season.

BOOK REVIEW

Nadkarni, M.V. *PARISARA NEETI SHATAKAM*-Chinmaya International Foundation Shodha Samsthana-Ernakulam Kerala; Pp. xx+76, Price Rs. 200/-

Sanskrit language is one of the richest languages in the world not only for the unique distinctions that it possesses (such as easy amenability to the computer language, etc.) as a language but also for the rich literature on diverse subjects and themes -secular and non secular-presented in that language. From the periods of hoary antiquity to the modern period literature has been developing in that language, though at different speeds and of varying volumes at different times. In the modern period there have been contributions in Sanskrit to express ideas relating to some of the modern subjects and also those developed in other languages. The book under review is one of such important contributions attempting to present the insights about environmental issues with very useful policy inferences. Being an eminent environmental economist himself the author is a truly multi disciplinarian and also a Sanskrit scholar poet.

PARISARA NEETI SHATAKAM is a handy poetic work in 113 simple anushtubh verses in Sanskrit, (except some verses like verse No. 48, composed in another meter) easily readable presenting the ideas relating to what the author calls '**environmental ethics**', outlining how human greed and adoption of incompatible models of economic development have ruined the beautiful environment in the world. From Vedic times importance of natural resources and their protection has been highlighted in India. In fact the Vedic hymns, religious practices, etc. to venerate trees, water, rivers, air, mountains, forests, fire, etc have emphasized in order to preserve the environment. **Environmental pollution and mind pollution (in the form of greed, deceit, etc.) are obviously closely interrelated.** Important prescriptions and cautions are found in plenty in many religious treatises and practices. It would be very educative to compile such ideas from the books of different

religions. It is but natural to allude to these facts with which one is more familiar, (e.g., reference to Brahman, Pancha bhutas, *Kathopanishat*, etc., in the present work). It must be admitted that there is nothing wrong in compiling the practices in different religions which are so valuable to preserve our environment.

As a part of India's own ancient heritage we do come across eulogies of the sea, (samudra sukta), waters, (varuna sukta), fire (agni sukta), trees (vanaspati sukta), etc in the Vedas indicating awareness of our ancients about the importance of nature and natural resources, etc. It is said that these resources cleanse not only the body but also the mind!!

आपः पुनंतु पृथिवीं पृथिवीं एताः पुनंतु माम् ॥

यदुच्छिष्टं अभोज्यं यद्वा दुश्चरितं मम ।

सर्वं पुनंतु मामापः असतां च प्रतिग्रहं स्वाहा ॥

'May the waters sanctify the earth; May they purify me; May the waters purify everything including my *greed for gifts from the evil sources!*' It was this view of veneration of nature which inspired the ancients to worship the *Panchmrutikaha* as components of religious rituals, five types of mother earth- five ways of worshipping the earth in a year, such as Naga Panchami worshipping serpents made of mounds of earth to signify the importance of reptiles in protecting the crops from rodents, bullocks made of mounds of earth in the beginning of sowing season, to signify their importance in agricultural activities, earthen idol of Krishna during the early part of rains, earthen idol of Ganapati and Gauri during the thick of rainy season, and earthen pot of Tulasi plant at the end of rains. Occasional worship of trees such as Asvattha, Tulasi, etc., preserving sacred groves in villages, are part of such common customs in India and they are very meticulously followed in villages and farming communities even now in India. Of course, the evil practices of polluting the environment through such customs, have to be stopped forthwith as has been pointed out by the author very clearly in this work (verse no. 96 to 99). The

author has also come out very vehemently against use of chemical fertilizers in cultivation, destruction of forests for the purpose of constructing buildings, developing urban areas and heavy industries, etc (verse no. 75 onwards). It is significant to note how our ancients had observed in appreciation the nature's own method of preserving trees and forests, (e.g., the animals like the goats and sheep plucking only the sprouts of trees leaving their branches and roots intact). This is beautifully captured by the *Mahabharata* verse quoted by the distinguished environmental scientist Prof. Madhav Gadgil, in his Foreword to this book-

पुष्पं पुष्पं विचिन्वीत मूलच्छेदं न कारयेत्

In this poetic work the author has made a reference to these practices highlighting how respectful approach to the nature was carefully preserved by our people in their day to day customs and practices. There are also mythological stories in ancient works, for example, (Bhagavata in Book VI; ch. 4) when Prachetasa sages started burning trees which had grown all around when they were performing penance. Such an irrational act was abhorred by the creator and as a result the destruction of trees and environment was stopped forthwith!

The work under review consists of simple verses, simple Sanskrit words and sentences. These verses are in the nature of folk songs, which are generally in simple meters, couplets, not strictly adhering to all the grammatical or metrical rules. It is amazing how the author has presented in this work the important views contained in the technical literature in environmental economics in very simple Sanskrit verses. It should be admitted that grammar in any language is the compilation of usages by the people rather than being the other way round, as stated in the saying-

प्रयोगशरणाः वैयाकरणाः

It should also be admitted that too much of liberty with the language cannot be taken; otherwise it

may ruin the grandeur of the very language itself. The Author has taken sufficient care while coining new words in the work (such as Karbaanila for CO2, the word karbotsarga for carbon emission, etc.); Author's own very aptly done translation of his verses and the words that he has coined should however, help the reader to understand the meaning of the verses!

The author has expressed his agony and anguish about how irrational are the human beings not caring for their own future well being!

मनुजातिः दुर्धन्यया;

very strange word; Verse No. 25), an interesting generalization is presented-

मनुजातिः किमाश्चर्यं चित्रबुद्धिर्दुर्धन्यया ।

उत्कृष्टा बुद्धिचातुर्ये निरुद्धाऽऽचरणे हिते ॥२५॥

His words of caution in the verse no. 94 for example, indeed reflect author's maturity of perspectives and his commanding style of presenting difficult ideas in simple verses!

This poem can become a folk song, as said earlier, which the farmers and common people can sing and propagate ideas about environmental ethics in Jaanapada style in street dramas, village fairs, etc. Just as Prof. Madhav Gadgil in his foreword to this book has said poems appeal to the heart than the head; the folk songs appeal to the heart of the masses and that is what is required in the case of such themes, for the preservation of the environment has to be considered as the responsibility more of the common people than merely of the government. In this background, author's appreciation of village women in preserving the environment is indeed very apt.

Dualistic development has come under severe criticism in this work. Interested deeply in the application of the Gandhian solution (Pp. 48) to the environmental issues is indeed quite laudable.

Readers would look forward to further elaboration of these ideas so as to have a fully Gandhian approach to Environmental Policy in different countries, though the present work does present its important components in a number of verses. In fact, the WTO negotiations can take up such valuable views to impress upon the developed and developing countries. Readers look forward to an eminent economist of environment in the author of the present work to his considered views based upon the results from researches in the field showing how the environmental protection policy can be evolved from such a strong research background and innovative approaches like in Gandhian studies. It is generally alleged in WTO circles (as made out in studies done by research units of WTO) that economists cannot fully perceive welfare effects of different environmental policies adopted by different countries and the author's emphasis on Gandhian approach would have dispelled such an accusation.

This entire poetic work can be studied by recognizing several inter related parts in it. Thus, first few verses are devoted to describing how the earth was a beautiful place for human habitation; next number of verses are devoted to environmental hazards on account of human callousness and greed;- climate change, floods, famines, forest fire hazards, warming up of the globe, rural

to urban migration effects on account of this pollution in urban areas, use of chemical fertilizers in agriculture, emission of hazardous chemical effluents by industries into the rivers, plastic menace, medical and health hazards, destruction of mountains and forests causing distortion of the ecological balance, etc., are described in subsequent parts. How the greed of the rich has caused this callousness is eloquently described by the author. On the whole, this work brings out deep insights of the author about the environmental issues and his experimentation with the traditional language in expressing the ideas relating to the problems of our times. In the entire work of 113 verses one unified theme relating to environmental ethics is observed, unlike in other shatakas (like Bhartruhari's where every verse deals with one theme), whatever is said about the problem of *Parisara Niti* in this *shatakam* is expressed in an interesting, lucid and convincing way. Readers would expect many such shatakas on different themes from a versatile and distinguished social scientist and Sanskrit scholar- poet like Prof M.V. Nadkarni.

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1. The Poverty and Un-British Rule in India, by Dadabhai Naoroji
2. System of National Accounts 2008 European Commission, International Monetary Fund, Print Stock SNA EA 2008 001, Organisation for Economic Co-operation and Development, OECD Code 302009191P1, United Nations, Sales No. E.08.XVII.29, document symbol ST/ESA/STAT/SER.F/2/Rev.5 World Bank
3. Central Statistics Office (2015): Changes in Methodology and Data Sources in the New Series of National Accounts: Base Year 2011-12, Ministry of Statistics and Programme Implementation, New Delhi, 26 June, Extract from Section 1, 2, 3, 4 and 6.
4. Discrepancies in GDP Data by T C A Anant.
5. Government of India Ministry of Statistics and Programme Implementation Understanding the New Series of National Accounts, Frequently Asked Questions
6. Government Product and National Income by Simon Kuznets

7. Report of The Jha Committee on Foodgrain Prices for 1964-65 Season, Chairman: L.K. Jha, Department of Agriculture Ministry of Food and Agriculture Government of India, Part I, II, and III.
8. Extract from the S.R. Sen Committee Report on Cost of Cultivation, Chairman: S.R. Sen, Section I, IV, VIII, IX, X, and XI.
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11. Committee on Agriculture (2013-2014) Fifteenth Lok Sabha Ministry of Agriculture (Department of Agriculture and Cooperation) Pricing of Agricultural Produce Sixtieth Report Lok Sabha Secretariat, New Delhi March, 2014 / Phalguna, 1935 (Saka), Chapters III, IV, and V.
12. Evaluation Study on Efficacy of Minimum Support Prices (MSP) on Farmers, (DMEO Report No.231) http://pmindia.nic.in/knowindia/images/img_symb1.gif NITI Aayog Development Monitoring and Evaluation Office Government of India New Delhi-110001, January, 2016.
13. Extracts from Report of Farmer's Commission
14. Prices, Costs of Production and Terms of Trade of Indian Agriculture, Presidential Address delivered at the 45th Annual Conference of the Indian Society of Agricultural Economics by N. Rath
15. Madhya Pradesh - Summary of the Council of Ministry, on Price Deficit Financing Scheme.
16. Minimum Support Prices Recommended by CACP and Fixed by Government (Crop Year), 3-11-2017.

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