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QUESTIONS AND COMMENTS INVITED FROM READERS

University and college teachers and students of Economics, Political Science and Sociology/Social Anthropology are invited to send to us questions of wider interest on the subjects of their study. We shall endeavour to publish in subsequent issues of the journal answers to selected questions received by us. This will form a separate section of the journal. The authors of the selected questions shall receive complimentary copies of one year's issues of the journal, as a token of our appreciation.

FROM THE NEW EDITOR

Taking over as Editor of the Journal of the Indian School of Political Economy does give me frightening thoughts especially when very distinguished people have preceded me in this position. I am very apprehensive at this moment on being comfortable in this position. But I am convinced that I could be a useful and continuing part of the experiment of the School to disseminate analytical studies on current developmental issues but one that is an inter-disciplinary one covering the disciplines of economics, political science and sociology. Over the years, the journal has covered research articles on themes in a wide range of areas, including agriculture, rural economy, industry, labour, foreign trade and balance of payments, money, banking, finance, government finances, planning and development, education, health, population, urbanisation, water resources, women's studies, politics, law and constitution, administration and governance and political economy, etc. We expect to continue this way and more but with greater focus also on issues in politics, law, history, etc., thus making the journal a more truly inter-disciplinary one. Though documentation has been a very characteristic feature of this journal, given the ease and availability of documents on the electronic media, this practice may not be a regular feature henceforth unless we come across very relevant, useful but difficult to access documents. These will surely be included. We do hope to soon come out with a slightly different format of the journal which while retaining the basic character of what the journal has always stood for, would enable more people to communicate their thoughts through this medium. We do hope our readers and others would be a willing and active part of this attempt of ours. As the first Issue of the current volume reaches you soon though delayed, I would like to assure our readers that very soon such delays will be a thing of the past.

S. Sriraman Aug. 20, 2019

UNDERSTANDING THE EXPERIENCE AND IMPACT OF DEMONETISATION - 2016 IN RURAL AREAS: A STUDY OF SIX VILLAGES IN WESTERN INDIA

Amita Shah, Samuel Abraham and Deepak Nandani

Demonetisation-2016 has attracted significant attention to a large number of diverse opinions on its socio-economic impact in India. However, rural India did not get due attention in the discourse. This paper attempts to understand the impact on and response of the rural poor to the Demonetisation-2016. Surprisingly, they do not seem to have been affected much 'adversely', as was anticipated. This is possibly because rural poor have had 'nothing much to lose'. Rather, they seem to have positive expectations to move forward. Finding political solutions to the problems confronting them such as rising demand for farmers' loan-waivers seems to be a part of this on-going process.

1. INTRODUCTION

1.1 The context

Demonetisation - 2016, also known as 'Note bandi' and announced on 7th November 2016, has been one of the most drastic steps in the recent history of monetary management of our country wherein currency notes of the denominations of Rs. 500 and Rs. 1000 ceased to be legal tender with immediate effect, i.e., from 8th November 2016. These currency notes, then, accounted for 86 per cent of the total value of the currency in circulation. The decision has had far-reaching effect on the people and the economy. This led to a high decibel debate among academicians, political dispensations, media, and the masses. While the government tried to position it as a pro-poor measure and tried to defend the step as a measure to curb corruption, black money, terror funding, drug trafficking, circulation of counterfeit currency, better tax compliance and improved tax to Gross Domestic Product (GDP) ratio; there has been strong disagreement on the argument that it will dampen the growth, will hardly achieve its stated objectives and destroy the 'common man' [Gautam, et al., 2017]. Former Prime Minister of India Dr. Man Mohan Singh

castigated it as a "monumental management failure" which would lead to dip in GDP growth by at least 2 per cent. He further termed Demonetisation - 2016 as "a case of organised loot and legalised plunder" [Rajya Sabha Secretariat, 2016].

It may be noted that such an initiative was not altogether new. Earlier also such steps were taken during 1946 and 1978 by the Government of India. But the 'Demonetisation - 2016' was unmatched in terms of its magnitude, range, and abruptness [Rajakumar and Shetty, 2016]. It has also been observed that the results of such decisions taken earlier were not very encouraging. Former Governor of the Reserve Bank of India (RBI). Dr. I. G. Patel argued that an exercise like Demonetisation hardly gives any expected results mainly because the illegal money is hardly put in the bank or any other legal forms. In his book [Patel, 2002], he further argued that "most people in possession of black money rarely keep their ill-gotten earnings in the form of currency for long. Thinking that black money is stashed away under mattresses or a suitcase is naive." [Patel, 2002, p. 159].

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It has also been argued by several academicians and economists that (i) the extent of circulation of counterfeit notes in the Indian economy is exaggerated; (ii) the claims of unearthing large amounts of black money is unfounded and based on a poorly informed view of what constitutes black money; (iii) no improvement in government finances may be expected due to Demonetisation - 2016; (iv) it is unlikely that interest rates in the economy may fall as a consequence of Demonetisation - 2016; and (v) the movement into a less-cash economy may neither lead to the shrinkage of the shadow economy nor reduce corruption. Instead, it may open up new spaces of surveillance and assaults on the personal freedoms of citizens [see, Patnaik, 2016; Dasgupta, 2016; Kohli and Ram Kumar, 2016; Mankar and Shekhar, 2017; Jaykumar, 2017; Arun Kumar, 2017, Sood and Baruah, 2017].

India's major political dispensations, other than the party in power, and the media made a strong case about the hardships faced by the common man - petty traders, farmers, housewives, informal sector, poor tribal, vegetable vendors, salaried class, etc., due to cash crunch. Overall, the discussions have strongly pointed out that the process, till now, has created significant negative impacts on the economy as well as on the people. But the issues are much deeper than these. It is likely to affect the overall growth, as well as, equity in the times to come. Studies on Demonetisation - 2016, by and large, suggest that the approach, at best, has obtained very limited results so far, in terms of reduction in black money and corruption; but has led to a decline in economic growth and loss of jobs especially in urban areas. However, what is missing here is an analysis of how people, especially in rural areas, have been affected.

1.2 The gaps

Barring two field-based studies; one that tried to trace the impact of Demonetisation - 2016 on urban poor [Krishnan and Siegel, 2017]; and, the other that tried to assess the impact on rural Tamil Nadu [Guerin et al., 2017]; the analyses, whether for or against, were based on either theoretical postulations or on ideological perceptions. There are hardly any field-based studies that offer a realistic assessment of the impact of Demonetisation - 2016, especially on the rural poor. The study in rural Tamil Nadu in this respect is quite comprehensive and explores the impact on different segments and classes of society. However, the impact could vary from state to state, depending upon the economic base and also socio-political and regional context. An industrially developed state like Tamil Nadu would experience the impact of demonetisation somewhat different than an industrially backward state like Chhattisgarh, or even Bihar. Moreover, the impact on tribal societies that still partly continue to transact through barter, will be different than those in a metropolis. We feel that is still a major gap in terms of our understanding of the impact of Demonetisation - 2016 on rural communities, from the view point of their experiences, as well as aspirations.

We argue that the issue related to Demonetisation - 2016 and the subsequent process of digitalisation is not about how effectively it has been managed, but more importantly, it is about 'moral economy'; thereby establishing 'legitimacy and credibility' of the action especially among poor. Unfortunately, the analyses so far have focused more on the arithmetic of Demonetisation- 2016, rather than medium and long- term impact, especially on poor in rural areas [Sood and Baruah, 2017]. Therefore, there was a need to undertake a study on impact of Demonetisation - 2016 on rural poor, covering diverse regions.

2. THE PRESENT ENDEAVOUR

This paper is an attempt in this context. The effort here is to find out the impact of Demonetisation - 2016, particularly on rural poor; and also, not-so-poor, in the three India states of Gujarat, Madhya Pradesh (MP) and Maharashtra, with a view to fill in the gap through a study based on primary data. The attempt was made to understand the process and also identify the gainers and the losers in the process. The paper focuses primarily on rural poor inhabiting diverse agro-climatic zones, viz., dry land, irrigated areas, and forest areas. The analysis is based on a field study of six villages, two each from Gujarat, Madhya Pradesh (MP) and Maharashtra. The idea is to get a quick overview of how Demonetisation - 2016 had impacted the rural economy as well as communities; and, how they have reacted to and also dealt with the process.

2.1 Objectives of the study

Given this overall context, the present analysis focuses on five aspects, viz.:

- * Assessing the short-term impact of Demonetisation - 2016 on the livelihoods of the rural poor;
- * Assessing the impact of Demonetisation -2016 on the rural economic base, employment, wages, migration, self-help groups, and microfinance, etc.,
- * Understanding people's perceptions and processes, underneath;
- * Identifying coping mechanisms adopted by the poor to face the situation; and,
- * Assessing the role of social capital and networks in the face of such a situation.

2.2 The Locale and the Respondents

The study is based on two villages each from Gujarat, Madhya Pradesh (M. P.) and Maha-

rashtra. While Gujarat and Maharashtra are among the most industrialised states in India, Madhya Pradesh represents one of the industrially less developed states. Nevertheless, Madhya Pradesh is a growing economy especially with rapid growth of the agriculture sector. What is also important to note is that there are significant intra-state inequalities across districts in each of these states. The three districts from where the sample villages were drawn, viz. Dangs in Gujarat, Khargone of MP and Washim in Maharashtra are comparatively poorer districts within the respective states. While Dangs, a hilly area, is predominantly tribal, in Khargone almost half of its population is tribal and the economic base of Washim is mainly agriculture. From the Dangs (Gujarat) two talukas, viz., Waghai and Ahwa; Kasrawad taluka from Khargone (MP) and Manglurpir taluka from Washim (Maharashtra) were identified to draw a sample of six villages for the study.

A total of six villages, viz., Ghodwahal and Mulchond from Waghai and Ahwa respectively (The Dangs, Gujarat); Sangvi and Sarwardevla from Kasrawad (Khargone, MP); and Chakwa and Ghota from Manglurpir (Washim, Maharashtra) were selected for the study (Table -1). From each of the six villages 50 households were selected for a detailed survey to assess the impact of Demonetisation on their livelihoods, issues pertaining to financial inclusion, assessment of the overall impact, effect on their daily lives, as well as, on the lives across various groups. Care was taken to include a wide variety of livelihood sectors in the survey. To supplement and cross verify the information, Focused Group Discussions (FGDs) were organised in each of the sample villages. An attempt was made to cover small informal businesses, separately, to assess the impact on rural micro-businesses. The survey was conducted from 1st March to 15th June 2017.

Sr. No.	State	District	Taluka	Villages	
(1)	(2)	(3)	(4)	(5)	
1	Gujarat	The Dangs	Waghai Ahwa	Ghodwahal Mulchond	
2	Madhya Pradesh	Khargone	Kasrawad	Sangvi Sarwardevla	
3	Maharashtra	Washim	Manglurpir	Chakwa Ghota	

Table 1. The Sample Villages

All the FGDs had good participation with a coverage of more than 50 persons, each. For instance, in places like Sarwardevla the number of participants exceeded 100, which also included several women participants. Besides, around 20 small business owners (mainly petty shopkeepers, informal service enterprises, vegetable vendors, tea stalls, etc.,) from each Taluka were

covered through interviews with a view to get a closer understanding of the issues. The information from these diverse enterprises was collected, using a separate 'Enterprise' Schedule (Table 2). The enterprises, selected for the survey, were located in the Haats (markets) closest to the sample villages.

Fable 2. Distribution of Micro-entreprene	eurs/Self-employed Across the Haats
Located in the Vicinity	of Sample Villages

State	District	Haats (Market places) cov- ered in lieu of the sample vil- lages	No. of Enterprises	%age
(1)	(2)	(3)	(4)	(5)
Gujarat	The Dangs	Saputara (close to Ghodwa- hal)	9	15.5
		Ahwa (near Mulchond)	9	15.5
Maharashtra	Washim	Karanja (near Chakwa)	10	17.2
		Manglurpir (near Ghota)	10	17.2
Madhya Pradesh	Khargone	Kasrawad (near Sangvi)	10	17.2
		Mandleswar (in the vicinity of Sarwardevla)	10	17.2
		Total	58	100.0

Source: Field Surveys

Table 3 provides village profiles extracted from the Census of 2011. As seen in the Table, except Sarwardevla, which has a population of 2,110 persons, there is hardly any significant variation in the size of the remaining five sample villages, in terms of population. The

population in these five villages ranges from 411 in Ghodwahal to 671 persons in Ghota, with an average of 548 persons. However, Mulchond in The Gangs is the largest in terms of the total area of 836.2 hectares (Ha) and the net sown area is highest in Sangvi. The number of households is in proportion to population density other than the highest the population. Sarwardevla also has the highest population.

District	Village	Area (Hectares)	Net Area Sown (Hectares)	Population (Nos.)	Households (Nos.)
(1)	(2)	(3)	(4)	(5)	(6)
The Dang	Ghodwahal Mulchond	172.3 836.2	135.5 185.4	411 582	85 115
Khargone	Sangvi	557.9	383.9	628	117
	Sarwardevla	399.7	238.8	2110	450
Washim	Ghota	388.0	323.8	671	158
	Chakwa	255.9	227.3	446	118

 Table 3. Area and Population as per Census 2011

Source: Population Census 2011: District Census Hand Book Part A.

2.3 Distribution of Households by Size

As mentioned earlier, 50 households were selected from each village for the primary survey. Of the total sample households (HHs), 287 (95.7%) were male headed while the remaining 13 (4.33%) HHs were female headed. Most of the respondents (282 out of the 300) were married. Two-thirds of the households had an average of 5 members, while only 2.7 per cent households had very large families with more than 9 members. However, the average size of the households from all the villages works out to a little more than five persons (See Annexure - I).

2.4 Availability of Infrastructure

As seen in Table 4, the level of social and physical infrastructure across the villages does not vary significantly. It may be mentioned that in all the selected villages, most of the households have bank accounts, due to the advent of 'Janadhan Yojana'. In many instances, there was more than one account within a household. While Janadhan accounts are fairly common, Postal accounts are very few, ranging between 10 per cent in Ghodwahal and 30 per cent in Sarwardevla and Chakwa each. People had to travel 5 to 10 kms to access banking facilities; before the facility was made available to open accounts under the 'Janadhan Yojana' launched by Government of India for universal bank linkages (Table 4).

2.5 Distribution of HHs by Size of Landholdings

212 (70.7 per cent) of the 300 households owned agricultural land. The remaining 29.3 per cent of households consisted of landless labourers. Among the land owing households, small and marginal farmers dominate in The Dangs (Gujarat) and Washim (Maharashtra). The households in Khargone (M.P.) have a relatively larger (over one third) proportion of medium and large farmers (Table 5). It may be mentioned that the scenario has remained the same in the landholding pattern during the last 12 months. Similarly, one would not normally expect any major change in access to water during the same period. Of the 212 farmers, 125 (58.9%) had some irrigated land. Farmers from Khargone had the largest proportion of irrigated farming, where almost all farmers, except two, had at least some land under irrigation. The proportion of the mean irrigated landholding is also high, which possibly would be leading to higher in Khargone, compared to the other two production as well as earnings from agriculture districts (see Annexure II).

Facilities	Ghodwahal	Mulchond	Sarwardevla	Sangvi	Chakwa	Ghota
(1)	(2)	(3)	(4)	(5)	(6)	(7)
School	Primary	Primary	Sr. Secondary	Middle	Primary	Middle
PHC	No	No	No	No	No	No
Anganwadi	Yes	Yes	Yes	Yes	Yes	Yes
Bus Stop/	No	Yes	Yes	Yes	Yes	Yes
Tap water supply	No (Hand pumps used)	Overhead Tank/tap	Overhead Tank/tap	Overhead Tank/tap	Overhead Tank/tap	Overhead Tank/tap
Haat (weekly)	No	No	No	No	No	No
Milk collection	No	No	No	Yes (Pvt.)	No	No
Pucca Road	Yes	Yes	Yes	Yes	Yes	Yes
Nearest town	Shamghan 11 Kms	Ahwa 7.5 kms	Kasrawad 16 kms	Kasrawad 12 kms	Manglurpir 15 kms	Manglurpir 10 kms
Distance district Hq.	44 Kms Ahwa	7.5 kms Ahwa	45 kms Khar- gone	30 kms Khar- gone	52 kms Washim	50 kms Washim
Bank Branch	11 kms DCB	7.5 kms.	6 kms.	30 kms.	5 kms.	5 kms.
Post office	11Kms	7.5 kms.	6 kms.	12 kms.	15 kms.	10 kms.
%age HHs with Bank Accounts	>80	>90	>90	Almost all	Almost all	All HHs
%age postal account (Approx.)	10	25	30	15	30	20

Table 4. Social and Physical Infrastructure in the Sample Villages

Source: Field Surveys

Table 5. Distribution of HHs by Size of Landholding*

Land Holding Category	The Dangs	Washim	Khargone	Total	%age
(1)	(2)	(3)	(4)	(5)	(6)
Marginal Farmer	48 (65.56)	27 (36.00)	10 (14.71)	85 (38.67)	28.3
Small Farmer	16 (23.18)	36 (48.00)	35 (51.47)	87 (41.04)	29.0
Medium Farmer	4 (5.79)	11 (14.67)	16 (23.53)	31 (14.62)	10.3
Large Farmer	1 (1.44)	1 (1.33)	7 (10.29)	9 (4.24)	3.0
Total Farmer Households	69 (100.00)	75 (100.00)	68 (100.00)	212 (100.00)	70.7
Landless Agriculture Labourers	31	25	32	88	29.3
Total Households	100	100	100	300	100.00

Source: Field Surveys; *Figures within the parenthesis are proportion of farmers across different categories.

2.6 Occupational Background of the Sample House Holds

Of the 300 sample households, as many as 284 (94.70%) reported agriculture and off-farm activities as their primary occupation which was followed by non-agriculture labour and government service (5 each). About 2.7 per cent each was engaged in government or private sector services one per cent respondents were selfemployed (Table 6). However, self-employed respondents are confined to only Khargone. Washim is dominated by farmers with 74 per cent respondents belonging to the farming community, whereas The Dangs has a significant presence of agriculture labour. Overall, it still continues to be, more or less, the only source of economic activities among the sample households.

It was also observed that migration is proportionately related to agricultural employment. Among the 300 sample respondents, 22.3 per cent reported that they do migrate, seasonally. However, through our informal discussions during the survey (from 1st March to 15th June 2017), it was noted that this had reduced marginally during the last 4-5 months. It may be mentioned that The Dangs shows a relatively higher intensity of migration, due to the lack of locally available sustainable livelihoods. In Maharashtra, the proportion of migrants was linked mainly with industrial sector. It is interesting to note that Madhya Pradesh has the lowest proportion of migrant workers population (Annexure III). This could also be mainly due to the better quality of land as well as the size of landholding, compared to the rest.

Main Occupation of	Avera	Total			
Household		The Dangs	Washim	Khargone	
(1)	(2)	(3)	(4)	(5)	(6)
Farming	Number	55	74	66	195
	% across state	28.2	37.9	33.8	100.00
	% within State	55.0	74.0	66.	65.00
Agriculture Labour	Number	37	20	27	84
-	% across state	44.0	23.8	32.1	100.00
	% within State	37.0	20.0	27.0	28.00
Livestock Rearing	Number	2	2	1	5
0	% across state	40.0	40.0	20.0	100.00
	% within State	2.0	2.0	1.0	1.70
	Count	4	1	0	5
Non-Agriculture	% across state	80.0	20.0	Nil	100.00
Labour	% within State	4.0	1.0	Nil	1.70
	Count	1	2	2	5
Government Ser-	% across state	20.0	40.0	40.0	100.00
vice	% within State	1.0	2.0	2.0	1.70
	Count	1	1	1	3
Private Sector Ser-	% across state	33.3	33.3	33.3	100.00
vice	% within State	1.0	1.0	1.0	1.00
	Count	Nil	Nil	3	3
Self Employed	% across state	Nil	Nil	100.0	100.00
_ •	% within State	Nil	Nil	3.0	1.00
Total	Count	100	100	100	300

Table 6.	Main	Occui	nation	of the	Household
\mathbf{I} able $\mathbf{v}_{\mathbf{i}}$	TATAT	U UUU	Jauvn	or the	IIUuschulu

Source: Field Surveys

In terms of their secondary occupation, as much as 35.30 per cent of the total 208 respondent households were engaged as Agriculture Labour. About 15.70 per cent respondents were engaged in livestock, and 6.3 per cent had agriculture, as their secondary occupation. It may be noted that close to 31 per cent respondents did not have any secondary occupation. Further, only about 12 per cent respondents were engaged in nonagricultural occupations as their secondary source of livelihood (See Annexure IV).

2.7 Size and Typology of the Business Establishments

We collected information from 58 business owners from the three states. They represented the diverse nature of businesses. The main businesses covered under the survey were: hardware shops (7), photocopying (5), village restaurants; grocery store and mobile recharge/repair shops (4 each), pan &cigarette stall; tailoring; transportation (auto rickshaw) and cold drinks and soda shops (3 each); bicycle repair shop, stationery store and vegetable stalls (2 each), besides a number of shops selling various items like Footwear, cloth, tea, ready-made garments, travel, food products, dairy products, eggs, laundry, sweet shop, etc., (See Annexure V). Of these 58 businesses, 25 were operating for more than 5 years, another 16 between 3 and 5 years and the remaining 17 were operating for less than 2 years.

The size of investments of businesses was quite small, primarily self-employment type; and, they mainly deal through cash transactions. Since most of the businesses are tiny, and largely self-employment type, the average size of the investment was as small as Rs. 59,240 (Table 7).

Sr. No.	District	Average Size of Investments (Rs.)	Number of Businesses
(1)	(2)	(3)	(4)
1	The Dangs (Gujarat)	48,050	18
2	Washim (Maharashtra)	33,500	20
3	Khargone (Madhya Pradesh)	95,050	20
	Aggregate Average Investments (Rs.)	59,240	58

Table 7. Average Size of Investment in Business

Source: Field Surveys

What is, however, surprising, is the businesses in Maharashtra, in terms of average investments, were the smallest in size (Rs. 33,500) compared to Rs. 95,050 in Khargone (Madhya Pradesh) and Rs. 48,050 in The Dangs (Gujarat). This might be due to the location specificity of the areas covered under the survey.

3. PEOPLE'S RESPONSES TO THE DEMONETISA-TION - 2016

Given a quick overview of the study area, as well as the profile of the sample households and

businesses, this section focusses on the level of awareness about Demonetisation-2016, among rural masses. It is important to understand this aspect as it is often argued that rural areas, because of their remoteness from the centre, suffer from information asymmetry.

3.1 Level of Awareness

As a first step, the idea here was to gauge the level of awareness about demonetisation and its implementation processes, by seeking their opinion on the issues. Our survey revealed that most of the respondents had heard about it; and, to an extent, were also aware of its potential implications. It may be noted that as many as 263 (87.67%) of the 300 households were aware of this step. They also had a fairly good idea of what they needed to do.

Our survey indicates that the awareness was much higher in MP and Maharashtra, compared to The Dangs, which is primarily a tribal district. A large number of landless and marginal farmers, especially in The Dangs, did not keep themselves abreast of the frequent changes in implementation modalities of the Demonetisation. Most of them told us that they, in any case, did not have big denomination notes in dealings. In fact, none of the landless households, irrespective of their location, had any idea of the main reasons behind the Demonetisation as well as the process involved, while dealing with the old currency. On the other hand, all the medium and large farmers were aware of these aspects, particularly its immediate implications for them (Table 8).

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There was a huge influx of both useful as well as frivolous information. All these came out during various interactions, we had in the villages across the three states. The media played an important role in this process, particularly in Maharashtra and MP, where people were well connected with satellite televisions, had smartphones and were social media savvy. In Maharashtra, some of the respondents showed the investigation team a 'WhatsApp' message that read 'the new notes have GPS and the movements could be tracked'(!) More interesting to note is that various mediums were used for packaging as well as transmitting the information about demonetisation among rural masses, by the government, with many of them having fairly limited capacity to read and write. Social capital, once again played an important role, especially in remote rural areas.

District	Heard/Aware about		Total				
	the Demonetisation	Landless	Marginal Farmers	Small Farmers	Medium Farmers	Large Farmers	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
The Dang	Yes	19	33	12	4	1	69
	No	12	15	4	0	0	31
	Total	31	48	16	4	1	100
Washim	Yes	24	26	33	11	1	95
	No	2	1	2	0	0	5
	Total	26	27	35	11	1	100
Khargone	Yes	31	10	36	16	7	100
-	No	0		0	0		0
	Total	31	10	36	16	7	100

Table 8. Level of Awareness of Demonetisation - 2016

Source: Field Surveys

All the 58 respondents from business as well as self-employment sectors were well aware of the decision.

Focussed group discussions on the issue, in all the villages, confirmed that most of the people were well aware of the decision of the government. They came to know about it during or immediately after the announcement on 8th November 2016. They also clearly understood that these notes were no more valid and could be used only for public services such as payment of electricity or medical bills, etc.; and, that those who were holding these currency notes were expected to either exchange the old currency with the new notes or deposit it in banks. A large number of respondents were also aware of the reasons for such a drastic step taken by the government. For example, they were convinced, to a great extent; that it will bring back the black money hoarded by rich people, stop the circulation of the counterfeit notes, stop terror financing and illegal activities, etc.

Further, it was highlighted during the Focussed Group Discussions (FGDs) that packaging of the issue like this helped the government in containing the resentment of the poor and the 'honest taxpayers.' It was also observed during the discussions that most of the people were willing to buy these arguments, even though there was some scepticism too. Though they were convinced of these arguments initially, as the cash crunch increased there were some murmurs of discontent. However, they were muted and people were 'willing to contribute' to the causes such as attacking the black money and corruption in the larger national interest. In fact, we also got the impression that the respondents appeared to derive some sort of 'sadistic pleasure', believing that the rich would be punished and lose heavily in the process. They were not as much concerned about the 'declared goals' of Demonetisation -2016, as they were upbeat and ecstatic about the potential loss to the rich businessmen and also the corrupt officials. Such responses, though not unexpected, are worth noting because that helps us in understanding the on-going process of linkages between the economy and politics in the recent context.

3.2 How far was this a Good Idea?

We also tried to understand the overall opinion about the demonetisation. It was interesting to know that their opinions varied quite significantly across the three states (Table 9). It was interesting to note that as large as 45 per cent of the total respondents found this as a good approach; and, another 35 per cent respondents observed that it is a 'good idea but poorly implemented'. Against this, 16 per cent respondents found it a bad idea; and, only a little over three per cent were indifferent. Further, the comparison across the states provided interesting, but somewhat unexpected results. For instance, the largest proportion of responses finding this as a good approach came from Maharashtra (73%), followed by Gujarat (41%) and Madhya Pradesh (23%). Further, as large as 60 per cent of the responses from Madhya Pradesh were found in the category of 'Good idea but poorly implemented'. In Gujarat, the proportion is 25 per cent followed by Maharashtra (21%). Overall, the important point that emerges from the discussion is that while the idea of demonetisation - 2016, got a positive response in the rural areas; the major issue was about the process of implementation.

State	Sample	Size of Village*	Over	rall view regard	ling Demoneti	sation	Total	
	vinages		Good Idea	A Good Idea Imple- mented Poorly	Poor Idea	No Opi- nion		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
Gujarat	Ghodwahal	Small	15 (30)	14 (28)	15 (30)	6 (12)	50 (100)	
	Mulchond	Medium	26 (52)	11 (22)	10 (20)	3 (6)	50 (100)	
	Total		41 (41)	25 (25)	25 (25)	9 (18)	100 (100.00)	
Madhya Pradesh	Sangvi	Medium	18 (36)	30 60)	2 (4)	0 (0)	50 (100)	
	Sarwardevla	Large	4 (8)	30 (60)	16 (16)	0 (0)	50 (100)	
	Total		22 (22)	60 (60)	18 (18)	0 (0)	100 (100.00)	
Maharashtra	Chakwa	Small	39 (78)	7 (14)	3 (6)	1 (2)	50 (100)	
	Ghota	Medium	34 (68)	14 (28)	2 (4)	0 (0)	50 (100)	
	Total		73 (73)	21 (21)	5 (5)	1 (1)	100 (100.00)	
	Grand Total		136 (45.33)	106 (35.33)	48 (16.00)	10 (3.33)	300 (100.00)	

Table 9. Overall Opinion on the Impact of Demonetisation - 2016

Source: Field Surveys; * <500 Population = Small, 500 to 700 Population = Medium and more than 700 = Large

3.3 Use of Banking Services during the Post-Demonetisation Period

Providing banking services to all, including those in rural areas, has been yet another major step within this process. An attempt was made to understand whether the account holders used banks for their financial transactions, across the size of landholding. A large proportion (84.67%) of respondents, who had a bank account, reported using their account often (Table 10). While 18 percent of account holders in The Dangs did not use banking services, almost all (95%) households in Washim were regular users of the banking facilities. Interestingly, the use of banking services increases with the size of land holding, irrespective of the area. For example, all the farmers having medium and large size land holdings used banking facilities, unlike marginal and small farmers. Overall, 94.55 per cent farmers were found to be using banking facilities, whereas only about 81 per cent landless agriculture labourers were using this facility. About 6.66 per cent did not respond to the question, with the highest number in The Dangs (Table 10).

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Given the fact that the policy approach had a fairly clear focus on increasing the use of debit card/ATM for financial transactions, rather than cash, we tried to gauge its use among rural households. Initially, there had been a lot of criticism about it. Some ascribe it to the lack of awareness, illiteracy, lack of infrastructure in the rural areas, etc., (Guerin, et al., 2017). In all, 38 per cent sample households (114 out of 300) and 40.71 per cent of the bank account holders (114 out of 280) reported having the credit/debit cards and also using it at the ATM. As expected, the use of ATMs is rather poor (about 18%) in The Dangs. This, being predominantly a tribal district, is more a subsistence oriented, barter economy where in-kind and small cash transactions are very common unlike the other two. The proportion of ATM users in Washim is 50 per cent and in may be noted that these villages are somewhat issued ATM cards to those who were their closer to the taluka places where the ATM regular clients.

Khargone it is 52.63 per cent (Table 10). It facilities are available. Banks also pro-actively

Type of responding household	Active Users/Non-Users of Banking Facilities								
	The Dang		Washim		Khargone		All State		
	Yes	No	Yes	No	Yes	No	Yes	No	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
Marginal Farmer	34	7	26	0	10	0	70	7	
Small Farmer	13	2	35	0	33	2	81	4	
Medium Farmer	4	0	11	0	16	0	31	0	
Big Farmer	1	0	1	0	7	0	9	0	
Total Farmer Households	52	9	73	0	66	2	191	11	
							(94.55)	(5.45)	
Landless	19	9	22	1	22	5	63	15	
							(80.77)	(19.23)	
Total Active Users and non-	71	18	95	1	88	7	254	26	
users of Banking Facilities							(84.67)	(8.67)	
Total Responding Households with Bank Linkages	8	89		96		95		280 (93.33)	
No Response	1	1	2	ļ	5		20 (5.67)	
Total Sample HH	10	00	10	00	10	00			

Table 10. Bank Transactions by Land Category

Type of responding								
household	Bank Linked	ATM User	Bank Linked	ATM User	Bank Linked	ATM User	Bank Linked	ATM User
Marginal Farmer	41	8	26	15	10	6	77	29
Small Farmer	15	3	35	18	35	23	85	44
Medium Farmer	4	0	11	5	16	10	31	15
Big Farmer	1	0	1	1	7	6	9	7
Total Farmer Households	61	11	73	39	68	45	202	95
Landless	28	5	23	9	27	5	78	19
Total Bank Linked Households & ATM Users Therein	89	16 (17.97)	96	48 (50.00)	95	50 (52.63)	280	114 (40.71)

Source: Field Surveys

Further, we explored as to how the demonetisation has impacted rural masses in meeting their cash requirements. Almost 80 per cent households each from Washim (Maharashtra) and Khargone (MP) reported visiting banks quite regularly during the post Demonetisation period, compared to The Dangs. In fact, over 21 per cent of the respondents did not transact with banks at all in The Dangs compared to 1.04 per cent in Washim and 7.36 per cent on Khargone. Even though it looks ironical, the 'poor did not face much problem as they did not have any cash to transact (Table 11). The visits were mainly for both depositing the old notes and withdrawing the new notes. However, several respondents complained that while they wanted to withdraw money, the banks had put their restrictions, besides those imposed by the Government, because of the shortage of cash crunch in the branches at the taluka places. It is noted that most of the households were having old notes when the decision was announced.

However, the magnitude of those who went to banks only to deposit money was lowest in The Dangs, as expected. In tune with other indicators, in The Dangs, close to 53 per cent households visited banks for depositing old notes as well as getting new notes, compared to 47.37 per cent in Washim and 60.23 per cent in Khargone. However, very few, only four persons in The Dangs visited banks frequently whereas the number of persons visiting banks rarely was 44 (62.86%) compared 13 (13.68%) in Washim and 19 (21.59%) in Khargone (Table 11).

How often you visited bank?	Visiting Bank Den	during last 3-4 l nonetisation - 20	Total Number & Percentage	
	The Dangs	Washim	Khargone	
(1)	(2)	(3)	(4)	(5)
Quite often	4	50	43	97 (34.65)
Regularly	22	32	26	80 (28.57)
Very rarely	44	13	19	76 (27.14)
Total who visited	70	95	88	253 (90.36)
Did not Transact/visit	19	1	7	27 (9.64)
Total Respondents	89	96	95	280 (100.00)
Purpose of Visit to Banks in the Case	e of those 253 who	Transacted		
To Deposit Money/old notes	09	28	16	53 (20.95)
	(12.86)	(29.47)	(18.18)	
To Withdraw Money/ Get	24	22	19	65 (25.69)
New Currency	(34.28)	(23.16)	(21.59)	
For Both	37	45	53	135 (53.36)
	(52.86)	(47.37)	(60.23)	. ,
Total	70	95	88	253 (100.00)
	(100.00)	(100.00)	(100.00)	

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Source: Field Surveys

It was strongly argued by the farmers that the process of getting financial resources, especially for the next phase of agriculture production, became difficult. Hence, the small and marginal farmers had to depend on their own resources. This situation has started improving increasingly with time. It is important to note that a fairly large proportion, (280 i.e., 93.3%) of households is already linked with banks. The access to banks for agriculture finance had already started last year and continued to cover all the households by the time Demonetisation was announced on the 8th of November 2016.

The respondent narrated difficulties they faced while dealing with the banks. Besides the shortage of cash both in banks and the ATMs, getting only high denomination notes; and, visiting banks and ATMs frequently, were some of the major complaints. It is interesting to note that while they were not making complaints against the government or the decision-makers, they were very critical of the banks. They accused the banks of giving preferential treatment to a few, taking a commission for exchanging the currency, not making any arrangements for long queues where people had to stand under the sun, even without drinking water for long hours, shortage of staff to deal with the work, and so on. Banks were the most visible agency for them to show their anger, it seems. However, a few bankers with whom we interacted informally told us that they were extremely over-burdened with the work related to demonetisation, and also that they did not get

adequate cash from main branches during the peak period. But the situation eased quite quickly. They also debunked all the allegations of any favouritism or underhand dealings.

3.4 Banking Facilities for Crop Loans

Given this situation, one would expect that banks would not be able to provide crop loan advances to the farmers and businesses due to the increasing pressure of other activities like exchanging the notes, depositing the old notes, etc. We tried to find out if crop loans, which are so critical to the timely agriculture operations, were made available to the farmers or not. A fairly large number (53 of the 74 sample HH) of farmers from Maharashtra and 55 (79%) farmers from MP reported having taken loans from banks after the Demonetisation - 2016. This proportion is reasonably good, given the circumstances. However, the credit flow to farmers from banks almost negligible in The Dangs (Table 12). Here, it may be kept in mind that farmers take loans from multiple sources such as cooperatives, commercial banks, money lenders, relatives or friends, agricultural service shops, etc., to meet their immediate requirements. This was corroborated during the field interactions as in many cases a second or third loan was also taken mainly from money lenders followed by relatives/friends and agricultural service shops (mainly credit purchase of inputs), as needs were not fully met from the bank loans.

Table 12. Household	8 Receiving	Crop Lo	oan from Banks
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Land Category	The	The Dang		Washim		Khargone		State
	Yes	No	Yes	No	Yes	No	Yes	No
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Marginal Farmer	1	47	16	11	7	3	24	61
Small Farmer	0	16	26	9	30	6	56	31
Medium Farmer	1	3	10	1	11	5	22	9
Big Farmer	0	1	1	0	7	0	8	1
Total	2	67	53	21	55	14	110	102

During our discussions, it was observed that the penetration of the moneylender and pawn brokers in providing loans was found to be quite high in Washim, as most of the small and marginal farmers are linked to these agents for their immediate credit needs. In case of The Dangs, loans from money lenders were very low.

3.5 Immediate Impact of Demonetisation - 2016 in Rural Areas

One of the immediate negative impacts of this process has been the declining overall wages across the board. Agriculture labourer were the worst sufferers in the process. Except for five agriculture labourers' households who experienced an increase in their incomes, 64 out of the 69 households experienced a decline across all the categories (Table 13). Irrespective of location, it seems, people suffered economically due to job loss, opportunity loss, etc. However, The Dangs is an outlier, mainly because of being a hilly area, where agriculture is a secondary occupation. About 4-5 households in The Dangs reported getting some agriculture work locally after they come back. Besides, they also got some work in the forest department. However, public works like NREGS was not found very common in these areas, as reported by the respondents. They also told us that the musters were prepared in the name of beneficiary farmers, for example, for digging wells in the Maharashtra villages under the NREGS. However, the work was done by using machines and contract labour who were supposedly better skilled.

District Change in Labourer's Income in the last 3-4 months (No. of HH) Public work like NREGS/ and Agriculture labour Non-agriculture Labour self-employed Total Income income (repair works etc.) Increase Decrease Increase Decrease Increase Decrease Increase Decrease (1) (2)(3) (4) (5) (6) (7) (8) (9) The Dangs 3 Nil 13 10 3 10 Nil 33 Washim 1 10 Nil 9 Nil 6 1 25 2 Khargone 1 Nil Nil 3 1 6 1 Total 5 21 Nil 24 Nil 19 5 64

Table 13. Changes in Income Post Demonetisation - 2016

More important to note is that overall there has been a general support to the demonetisation due to various reasons ranging from political to anticipated benefits from the decision in the long-run or the risk of being branded as supporter of black money (or against national interest) or being part of fixing the rich, etc., as we will see later in the discussion on FGDs. But the data indicates that a majority of the households reported that Demonetisation was impacting their daily lives. As many as 269 (almost 90%) of the sample households felt that it had impacted their daily lives quite adversely. The remaining 31 persons did not respond. Top three adverse impacts of demonetisation on people were cashcrunch to meet daily sundry expenses, difficulty in meeting daily needs and adverse effect on livelihoods, in that order (Table 14). Time spent on non-productive work like standing in the bank queue was least in The Dangs compared to the other two, whereas, agriculture operations suffered a great deal in Washim, due to demonetisation.

Several returnees from other towns, due to lay-offs, shared their woes. As is widely recognised, the construction and informal sectors were particularly affected by the Demonetisation. The labour force in the construction industry and contract labour in Micro Small and Medium Enterprises (MSMEs) consists of predominantly migrant workers. Once these sectors were hit, the workers also lost their jobs and returned to their villages. It hit the village economy very adversely as all the remittances suddenly dried up. Overall difficulties in terms of getting a loan for the purchase of inputs, seeking financial support, loss of time for economic activity and other management related issues were more prominent in Khargone (MP) followed by Washim (Maharashtra) and The Dangs (in Gujarat), in that order.

Nature of Impact		Districts*	Total	%age	
	The Dangs	Washim	Khar- gone		
(1)	(2)	(3)	(4)	(5)	(6)
Problem in terms of availability of cash for daily needs	87	68	90	245	81.66
Difficulty to meet daily Need (food, milk, medicine, etc.)	87	71	73	231	77.00
Affected daily livelihood (availability of work and wages)	51	63	71	185	61.66
Time spent for non-productive work like standing in queue	1	27	28	56	18.66
Adverse Impact on Agriculture Operations	5	30	12	47	15.66
Problem for Asset Purchase	2	26	26	54	18.00
Problem in Family functions	2	28	15	45	15.00
Other	2	5	5	12	4.0
Number of Respondents Impacted by	88	85	96	269	89.67
Demonetisation					
No Response	12	15	4	31	10.33
Total	100	100	100	300	100.00

Table 14. Immediate	impact	of Demonetisation	- 2016
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Source: Field Surveys; * Numbers do not add up to 100 due to multiple answers.

3.6 Women Self-Help Groups (SHGs)

We could not get details on overall discrimination faced by women in general, which is independent of the process of Demonetisation. Some of those who had some personal savings had to use that for daily consumption and household needs. By and large, women rather than men narrated how difficult it was to manage basic requirements of the household, during the first one and a half months of Demonetisation -2016. It was also revealed by a few women SHG members that their savings and credit groups started feeling the pinch, as the women (members) were not able to repay their borrowings or deposit their instalments as per the schedule. This was primarily because they did not have enough cash to repay their dues. Many SHGs confirmed and reconfirmed that five SHGs in The Dangs, 12 in Washim and nine in Khargone had become dys-functional, impacting about 300 women, adversely.

3.7 Coping Mechanisms to Face the Cash Crunch

While agriculture in The Dang is mainly based on Kharif (monsoon) crops, the main crops in Khargone and Washim are largely based on Rabi (winter) season. Khargone had about 50 per cent of the cultivable land under the Rabi crop. The corresponding percentage in Washim was about 25. It was noticed that there was not much reduction in the sowing of Rabi. While there was cash crunch in banks, their friends and relatives, and the traditional 'Sahukars' helped them in tiding over their cash needs. As many as 110 households reported that they took loans from moneylenders (for details see, Table 15). It shows that the failure of the banking sector to stand by its clients (farmers) got further aggravated.

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Table 15. Coping Mechanisms for Cash Crunch

Sr. No.	Mechanism	Number of House Holds	%
(1)	(2)	(3)	(4)
1	Borrowed from moneylenders	110	40.89
2	Borrowing from friends/ relatives	104	38.66
3	Reduced expenses	34	12.63
4	Postponed needs	13	4.83
	Purchases on Credits	8	2.97
	Total	269	100.0

It may be noted that social networks and social capital also played a significant role in tiding over the difficulties emanating from Demonetisation - 2016, as revealed by the respondents from all the villages covered in the study, irrespective of the region. In all, about 39 per cent households relied on this social capital to cope up with the situation.

4. RESULTS FROM THE HOUSEHOLD SURVEY

4.1 Perceived Outcomes and Impacts

In the public domain, there were highly polarised views on the issue of Demonetisation -2016. However, what is still required is a muchnuanced sociological understanding of how people dealt with the issue at large, moving away from the binary positions of supporting or opposing a decision which, in a way, was unprecedented. Nevertheless, in this section, an attempt is made to collate the responses of people on the demonetisation. The information collected from the 300 households is being presented in this section. While a significant proportion of respondents felt that it had impacted their lives adversely, another fairly impressive proportion of respondents thought that it was a good step. A small proportion of people did not feel any impact of demonetisation either way (Table 16).

The major observations on the actual and perceived impact, as expressed by people, related to the difficulties in implementation. These involved: (i) waiting for long hours in the queue (87.66%), and (ii) banks were not giving money as per the guidelines of RBI (50.30%). However, close to 50 per cent respondents felt no change or any cash crisis. Those whose lives and livelihoods had been adversely impacted responded that they received lower wages (30%), faced lots of

(N=300)

financial difficulties to manage basic needs during the first month (15.70%); faced difficulty in purchasing agricultural inputs (18.730%); had to borrow (30.30%); and, had to buy beyond the immediate requirements as the shopkeepers did

not have adequate smaller currency and insisted to adjust the balance in buying something in addition to what was already purchased (15.70%), etc.

Sr. No.	Major Responses	No. of Responses	Per cent
(1)	(2)	(3)	(4)
Negative Im	pacts		
1	Stood in the queue to deposit/withdraw cash	263	87.66
2	Banks were not paying as per the guidelines of RBI	151	50.30
3	Difficulty to get small denomination Notes changed; and cash crisis	149	49.70
4	Had to borrow	91	30.30
5	Got less work, wage got delayed	90	30.00
6	Difficulty in buying agriculture inputs	55	18.30
7	Need to purchase more than required due to lack of small currency	47	15.70
8	One month passed with a lot of difficulty	47	15.70
9	Rich people were not seen in the queue in banks	46	15.30
10	Problem due to payment through cheques	46	15.30
11	Production has come down	46	15.30
12	Problems faced due to lack of knowledge about banking	18	6.00
13	Needed more staff in bank	10	3.30
14	Old notes were not accepted by service providers like petrol	9	3.00
	pumps, hospitals, etc,		
15	Difficulty in buying fodder for livestock	9	3.00
16	Transferred money in the account of poor	6	2.00
17	Economy slowed down	6	2.00
18	Did not get loan	4	1.30
Positive View	vs		
19	Increase in cashless transactions	59	19.70
20	Black money came back to bank	49	16.30
21	Got awareness about banking	40	13.30
22	New account opened	39	13.00
23	Poor got respect	39	13.00
24	Corruption will reduce	38	2.40
25	Personal income improved	24	8.00
26	Savings increased	21	7.00
27	Money hidden by women at home came out	16	5.30
28	Economy will improve	14	4.66
Indifferent/N	No Impact		
29	It did not make any difference	21	7.00
30	Did not need bigger denomination notes	11	3.70
31	Did not visit bank, hence did not face any problem	10	3.30
32	Did not have money hence, did not face any hassle	7	2.30

Table 16.	Overall Views	of the Respondents	on Demonetisation
10010 100	01010110	or the respondents	on Demonstration

Source : Field Surveys

On the other side, there was a sense of optimism also on the likely future benefits of the Demonetisation. A number of respondents opined "cashless transactions will increase that (19.70%), black money will come out (16.30%), poor would get their due honour (13%), etc." It was also felt that the number of taxpavers will increase and the economy will improve, in the long run (Table 16). There was also a segment of respondents, though minuscule, which did not feel the pinch of Demonetisation - 2016. Moreover, the poor did not have 'higher denomination notes to exchange' in any case. Therefore, they did not even bother to go to the bank. In a way, it suggests that they had nothing to lose or gain from this exercise as they hardly had any money.

4.2 Impact on Small Businesses

It was often argued that small, informal businesses had suffered the most as they were largely based on cash transactions. Even the print and electronic media were full of stories of the sufferings of the 'common man', which also included this segment within urban as well as rural economies. Keeping this in view, the survey covered 58 micro businesses across the three sample districts. We started our inquiry with the extent of bank linkages and ATM use among the small businesses in small towns lying in the vicinity of the sample villages. Our data indicate that all the owners of small businesses covered by the study, except for one in The Dangs, had a bank account and some of them had even multiple accounts. A large number (63% of those who had Bank accounts) also are very regular in bank transactions. Almost 83% of the respondents used ATM facilities often.

It was envisaged that the impact of Demonetisation on business will be multifarious. While on the one hand, it will reduce their turnover, due to decreased demand, it will create problems of payments to the suppliers due to the cash crunch, on the other. Of the 58 small businesses, 84.48 per cent felt that their businesses, i.e., total sales as well as realised value, have declined. In M.P., all the respondents felt that their business has reduced. And, over 91 per cent respondents felt that the Demonetisation has impacted their day to day lives and livelihoods quite adversely.

It was observed that the demand for products other than essential items such as food, and other daily basic needs has slowed down significantly. Since the available cash with the buyers was to be reserved for their basic necessities only, the other segments of small businesses were hit more adversely. In all, 75.9 per cent small businesses witnessed such adverse effects (Table 17).

Impact on	Area			Impact on	Area				
Business	The Dangs	Washim	Khargone	Total		The Dangs	Washim	Khargone	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Decrease	11	18	20	49	Adverse	14	17	20	51
	(61.11)	(90.00)	(100.00)	(84.48)		(77.77)	(94.45)	(100.00)	(91.07)
Not	7	2	0	9	Not	4	1	0	5
Significant	(38.89)	(10.00)	(0.00)	(15.52)	Significant	(22.22)	(5.55)	(100.00)	(8.93)
Total	18	20	20	58	All	18	18	20	56
	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)

Table 17. Impact on Businesses and Daily Life

Source: Field Surveys; * Two persons did not respond

Most of the respondents were quite vocal about the problems they faced, compared to the rural households. Besides, most businesses were also compelled to sell on credit, at least to their regular customers. Cashless and PAYTM kinds of transactions also posed problems as most of the customers were not used to such modes of payment. Even small businesses (82.8%) had to face the heat of cash crunch. Due to the falling sales and the shortage of cash 47 (81%) small business owners said that their livelihoods have been affected adversely. Almost 67 per cent business households faced difficulty in meeting their daily needs (Table 18).

					(n=58)
Sr. No,	Nature of Impact on day-to-day life	A	rea/talukas (No	s.)	Total & (% of Total
		The Dang	Washim	Khargone	Response)
(1)	(2)	(3)	(4)	(5)	(6)
1	Problem in terms of availability of cash for daily needs	11	17	20	48 (82.8)
2	Affected daily Livelihood (lack of business and income)	11	16	20	47 (81.0)
3	Difficulty to meet daily Need (Food, medicine, children, etc.)	5	14	20	39 (67.2)
4	Impacted Agriculture Activity	1	13	19	33 (56.9)
5	Time spend for non-productive work like standing in queue	10	8	8	26 (44.8)
6	Problem for Asset Purchase	0	1	0	1 (1.7)
7	Family functions	0	1	0	1 (1.7)
8	Other	1	0	0	1 (1.7)
9	Total response	39	70	87	196 (100.00)

Table 18. Impact on day-to-day Lives of Small Business Owners

Source: Field Surveys

Shops selling items of daily consumption had almost a regular business, but other businesses had tough times; there was no sale as people were saving whatever cash they had for daily survival. In all the three districts covered in the survey, there was unanimity that business people (mainly, retail business, trades, etc.,) suffered a lot, and it would take a long time for recovery.

Most (63.79%) small business owners survived by borrowings from friends and relatives and by helping each other, whether it was through

borrowing cash or providing small currency or standing in the bank queues. It may also be noted that about 33 per cent respondents postponed their long-term investments like buying property or motorcycle, etc.; and another about 27.6 per cent reduced their expenses on products other than their basic needs. Buying on credit was another method to face the calamity, across the regions. "The time was tough for everybody" was a common refrain. Social capital played a very significant role in their weathering the storm (Table 19).

	• 0		·		(n=58)
Sr. No.	Coping Mechanism		Areas		Total
		The Dang	Washim	Khargone	
(1)	(2)	(3)	(4)	(5)	(6)
1	Borrowing From (F & R)	4	15	18	37 (63.79%)
2	Postponing Need	11	8	0	19 (32.75%)
3	Reducing Expenses	9	7	0	16 (27.58%)
4	Buying on Credit	1	2	2	5 (08.62%)
5	No Effect	2	0	0	2 (03.44%)

Table 19. Coping Mechanism to Meet Cash Crunch by Small Businesses

Source: Field Survey; * The figures in total column do not add up to 58 because of the multiple responses.

We also attempted to get an overall view of the small business owners on the demonetisation and how did it impact them, in general. Since the question asked was open-ended, the responses were also diverse and multiple. The overall views of business owners were also put under three sub-sets, viz., adverse, positive or indifferent.

The responses to this question reconfirmed what they had opined in the preceding sections on the impact of demonetisation on business and day-to-day lives of micro, informal business owners. By and large, the respondents felt that

Demonetisation - 2016 has led to slowing down; and, also that they had to waste a lot of time by standing in the bank queues. The availability of smaller denomination currency was at the root of all these problems. However, like the household respondents, some of them also felt that it may do well to the economy in the long run and control corrupt practices by increasing the use of cashless transactions (Table 20). A small fraction (1.7%) of the respondents did not feel the heat and felt that things could improve if the banking system is strengthened.

Key Responses	No. of Respondents	Percentages
(1)	(2)	(3)
* Adverse Impact		
Business Slowed Down	40	69.0
Standing in Queue/Wasted Time	31	53.4
Business Affected Due to Problem of Change	27	46.6
Impacted Livelihood	20	34.5
Did Not Get Sufficient Money	8	13.8
Credit to Customers	7	12.1
Rich Person Not Standing in Queue	3	5.2
Positives		
Got Awareness About Cashless Transaction	21	36.2
Black Money Returned	12	20.7
Increase in Cashless Transaction	9	15.5
Effect on the Health of the Economy Positive	7	12.1
Saved Money	4	6.9
Indifferent		
Need to Strengthen Banking System	1	1.7
No Effec	1	1.7

Table 20. Overall View of Small Businesses on The Demonetisation

Source: Field Surveys

(n=58)

5.AGGREGATE RESPONSES

Based on the various responses covered till now, it will be useful to get an overview of how people in selected rural areas viewed this step, in the context of its impacts; both in the short as well as medium terms. However, let us put a word of caution that the information presented here is based on their understanding rather than the actual impact on the respondents.

The larger picture, presented in Table 21, shows that the responses vary quite significantly

across regions. For instance, the process of Demonetisation in rural Washim (Maharashtra) is seen as a positive step compared to the other two. Although 72 per cent households found this as a good idea, 22 per cent of the households thought it was a good idea but implemented poorly; 22 per cent of the respondents in MP felt that it was a good idea and an overwhelming 59 per cent considered it as poorly implemented. A small proportion of the respondents had no opinion either way.

Table 21. The Overall Responses on Demoneusation - 201	T٤	ab	le	21.	The	Overall	Res	ponses	on	Demonetisa	tion -	201
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Assessment	The	Dang	Wa	shim	Kha	rgone	T	otal
	HHs	Business	HHs	Business	HHs	Business	HHs	Business
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Good Idea	41	8	72	10	22	9	135	27
	41.0%	44.4%	72.0%	50%	22.0%	45%	45.0%	46.6%
A Good Idea Implemented Poorly	25 25.0%	8 44.4%	22 22.0%	6 30%	59 59.0%	3 40%	106 35.3%	17 29.3%
Poor Idea Implemented Poorly	25 25.0%	2 11.2%	5 5.0%	4 20%	19 19.0%	8 15%	49 16.3%	14 24.3%
No Opinion	9 9.0%	0 0%	1 1.0%	0 0%	0 0%	0 0%	10 3.3%	0 0%
All	100 100.0%	18 100.0%	100 100.%	20 100.0%	100 100.0%	20 100.0%	300 100.0%	58 100.0%

Source: Field Surveys

6. PEOPLE'S VOICES: VIEWS FROM FGDS

As mentioned earlier, it would be useful to validate the narrative obtained through a structured schedule. Moreover, it was also thought that the Focussed Group Discussions (FGDs) will provide broader insights into what people in general think, to be able to cover a larger set of people that may lead to understanding the larger picture of the impact of as well as expectations from the Demonetisation - 2016. For, the individual narratives could be sometimes at variance with collective views.

It was noted that the overall tenor of the FGDs was on similar lines with what was obtained from the survey findings. For instance, the first concern, immediately after the announcement of the demonetisation on 8th November 2016 was, 'What shall we do if all the money is taken back by the banks?' The next, and perhaps more important reaction, from a large number of peo-

ple, was 'no matter what has happened to us, it is 'good' as it brought everyone at par, irrespective of their economic and social statuses'. However, it was also pointed out that immediately after the decision, they had to spend considerable time in the bank and ATM queues and that they also had to make repeated visits to banks to exchange old notes or withdraw their own hard-earned money. In their own words 'we had to suffer the visits to banks or ATMs several times to withdraw small amounts of money'. Further, it was highlighted that while the local shopkeepers were not refusing the old notes, they insisted that 'we buy goods for the entire amount, whether it is required or not; or else they would keep the remaining amount to be used for the next round of purchases'.

It was also observed that those who had more cash took the help of friends and relatives for changing the currency. A few respondents coyly confessed having made a fair amount of money by standing in the queue for someone else, to exchange the notes. Though, the discussion during the FGDs did not bring out any specific case wherein money was deposited in someone else's account, and the person got paid for that. The FGD participants also told that it had forced them to be extremely cautious and selective while incurring any expenditure. They strictly avoided '*fizulkharchi*' (wasteful expenses).

In all the villages, the poorer segments of the society were least affected, as they did not have any money or savings. As a result, they did not have to face the 'hardship' of 'standing in the bank queue'(!)

The wage labourers in agriculture were paid advances in the old currency which they could use to purchase grocery and other goods of daily needs from the local shopkeepers. The major problem was in getting the change or notes of smaller denominations. Sharing their experiences, a few economically better off persons stated that they had to unnecessarily fill up forms to deposit their hard-earned money. People also observed that the banks were giving money to those who were well known to them or those who had 'some pull and push' and connections. They alleged that sometimes banks converted currency even for a commission (in Maharashtra and MP). While common people were getting notes worth one or two thousand, with great difficulty and after spending a lot of time, the people with 'jugad' (hack) were getting money easily. During the discussion, a few used to ask others 'have you seen any rich man in our area standing in the queue?'

Many participants also observed that standing in the queue helped them in understanding various issues related to the use of ATM, cashless transactions, Paytm, online banking, etc. They also came to know, while standing in the queue, as to how people cheated on tax and how the demonetisation would help in getting more tax that would be used for development and for helping farmers. Most of the participants in Maharashtra and MP used to underline the need for 'Karz Mafi' (loan waiver) as the government has gained a lot of cash from this exercise. They also apprehended that the government may take stern action on corruption and black money in the future too. Irrespective of the hardships they faced, many common persons thought that it would be good for the masses. They felt they were a part of an exercise that would fix the rich and the powerful. Under the spell of such an illusion created by propaganda, they were willing to suffer the hardship for a 'short-term' to teach the rich and powerful a lesson. Such views were prominent in the villages of MP and Maharashtra. However, a significant number of respondents also observed that 'the rich were not seen to be standing in the queue' for which they blame the banking system for rolling out a preferential treatment, maybe for a commission.

The initial phase of demonetisation was fairly similar to what is known as 'weapons of the weak' strategy as propounded by James Scott [1985] in his classic study on how the poor employ various techniques of everyday resistance to power and hierarchy. It requires psycho-social analysis, where, irrespective of the difficulties the poor suffer, they support decisions thinking that they are also a part of fixing the rich and powerful.

Needless to say, the FGD participants were not able to visualise the mid or long-term impact of such a decision. On repeated questions on the secondary and tertiary impacts, there was not much response either during FGD or during the household survey. They generally felt that it is a transitory phase and problems are only of short term in nature; and that, it is a good decision that will benefit the country and the masses, in the long-run. This response was in tune with what the mainstream media and the ruling dispensation was trying to project.

7. IMPACT IN THE MEDIUM AND LONG-TERM: TOO EARLY TO PREDICT

It is quite pertinent to observe that, at present, in two states, viz., Maharashtra and MP, we witness increasing agitations by farmers, for enhancing minimum support prices for their produce, along with loan waivers. The farmers who used their ingenuity to overcome the difficulties during Rabi cultivation were expecting a better return. However, the commodity prices and the markets failed them. There was also a feeling that the money coming to the coffers of the government should be used for loan waiver, as was evident during our field interactions, particularly in M. P. and Maharashtra. It is interesting to note that those who stood by 'the demonetisation' (on their own or due to peer pressure) were now up in arms against the government when their expectations were not being met.

The response to the questions on the impact on agriculture provides a rather complex picture. The Kharif season, was over, by the time the demonetisation was announced. The produce had either been sold or was in the process. Those who sold earlier got full or partial payment in cash. They were paid the balance through cheques or were assured of the cash payment by the traders, shortly. Others, who could not sell their produce before the demonetisation, had a tough time. They got payments through cheques, which usually got delayed in clearances; and, even after clearances also the farmers were able to withdraw only around Rs. 2000 in cash, due to restrictions imposed by banks locally, as they did not have enough cash to pay. The prices of the produce also reduced compared to the last year due to the 'cash crunch'. Those who were in need of immediate cash, had to sell in distress at lower prices.

All the households from the Washim and Khargone complained about falling prices and demanded that the government needed to intervene and increase the minimum support prices, besides assuring the purchase of the agricultural produce. While there was a demand for loan waiver in Khargone and Washim villages, in The Dangs the respondents did not articulate any such demands. It may be noted that agriculture is mainly a subsistence activity in The Dangs.

In Maharashtra, several farmers had their accounts in Cooperative Banks; and, the cheques that they received were deposited therein. However Co-operative Banks were not given new notes (nor were they allowed to deposit old notes) which significantly affected their account holder farmers.

The preparation and sowing season of Rabi also had begun at the time of the announcement of Demonetisation - 2016. It was reported that 25 to 30 per cent farmers in Khargone (MP) and Washim (Maharashtra) had started facing serious problems in buying seeds, fertiliser, paying

wages, etc. However, agriculture labourers did not suffer much as, in most cases, they were paid advance wages in old notes. In Khargone, most of the labourers were on a yearly contractual arrangement, and, hence were paid a lump sum amount in advance. There were also instances wherein a part of this was paid in kind and the remaining was assured to be paid in the future, when the situation normalised. Together, the slump in employment, in the initial phase, had a negative impact on agriculture employment, which also involved migrants in these regions. It was also noted that the migrants, mainly those working in non-agricultural sectors, had come back, owing to lack of cash with their employers. This further aggravated the situation.

An important point that emerged across the sample villages was about mutual help and support; sometimes even in the form of providing basic household requirements. Friends and relatives and other social networks came to the rescue during the hour of crisis. Those who were facing problems for Rabi cultivation were helped by their networks, which also included shop owners. It was further emphasised that Demonetisation - 2016 unexpectedly brought them together and people helped each other during this hour of distress. Also, none of them had to sell livestock or other properties for want of money. It was reported that most of the people postponed both the sales as well as purchases of nonessential items. Even repairing of houses and the improvement of land or water resources got postponed.

Overall, the scenario that emerged from the information obtained through different sets of analyses, indicates that people, especially in rural areas, had not completely lost their hopes. There have been losses, but not so significant. The people, across the states, have reasons to forge ahead and contribute to the process of change as major stakeholders.

8. CONCLUDING REMARKS

The Demonetisation - 2016 was aimed at fixing the ills of corruption, black money, terror funding, counterfeit currency, etc. However, later on, a few more objectives like reducing the cash economy by promoting digitalisation, increasing the tax base, etc., were also added to its broader objectives. It was packaged as an ethical step and a measure that will benefit the poor in the long run. Our analysis indicates that rural poor had, by and large, bought the idea and had welcomed the decision, as they felt that it would teach a good lesson to the corrupt and those who have made money unethically; and, have been keeping it in 'cash'. They felt that they had little to lose except facing short-term hardships. It was expected that this step will cleanse the economy and lots of money will come back to the government coffers which could be used for further development.

Political support for demonetisation mainly emerged from a 'national interest discourse' where even the supposedly opponents were reluctant to criticise the decision fearing criticism and 'name-calling', at the local level. At least 30 per cent people genuinely felt that it was a good decision. However, as we saw, especially in Maharashtra and MP villages, the support for the decision (and hardships suffered) was expected to be compensated in the future through 'loan waiver', 'better returns to farmers', etc. However, if such expectations are not fulfilled, the same supporters could be up in arms against the government. In fact, the recent farmers' strikes in MP and Maharashtra is an indication of such a consequence. The supporters are now demanding their pound of flesh.

Another important observation is the way the poor and powerless interpreted and supported the decisions. In most of the villages, the poor expressed that they did not have much to lose (no money, no bank/ ATM queue) but were happy that the better-off ones, who have accumulated huge black money in cash, were being treated on par with the rural poor, at least for some time.

It may be added that the rural poor are hardly aware of the long-term macro-economic implications of the decision and are not able to comprehend it beyond its immediate impact. They also do not have an appreciation of the impact of Demonetisation - 2016 on the growth of the economy or the real impact in terms of rooting out the black economy or reducing corruption. They also do not have any idea of the past experiences of Demonetisation in the country and elsewhere. Therefore, their views should be taken with caution. Nevertheless, one could conclusively make five observations; (I) the rural poor, by and large, do not consider the decision of Demonetisation - 2016 as ill-conceived, with negative impact on them; (ii) they treated hardships encountered by them as a temporary phenomenon which would benefit them in the long-run; (iii) they saw it as an anti-rich move that was well appreciated by them; (iv) it has aroused high expectations among the farmers that their loans will be waived off; and, (v) farmers think that they will be able to get better prices for their agricultural produce. However, it was felt that if these expectations are not fulfilled soon, the same rural masses that have favoured Demonetisation - 2016, could take a diagonally opposite position, which may not be politically very palatable to the powers that be.

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No. of Members in HH	Frequency	Percent
(1)	(2)	(3)
1-5 Members	200	66.7
6-9 Members	92	30.7
More than 9 Members	8	2.7
Total	300	100.0

Annexure - I Distribution of HH according to Members

Annexure - II
Average Land Ownership and Type of Land*

(Land in Acres)

District Land Type of Land Land in the Para-meters Ownership Name of Cultivable Of the Cultivable Non-Women Cultivable Land Land Land Irrigated Non-Irrig ated Land Land (1) (2) (3) (4) (5) (6) (7) (8) The Dangs Mean land-holding 2.71 1.13 2.34 1.00 2.80 2.42 No. of Land Owners 69 68 8 32 45 2 193 9 2 **Total Land** 184 75 109 Mean land-holding Washim 3.83 3.73 1.83 3.30 3.34 3.43 No. of Land Owners 75 74 6 27 56 7 **Total Land** 287 276 11 89 187 24 Khargone Mean land-holding 6.09 6.03 1.33 5.91 4.00 3.64 No. of Land Owners 68 68 3 66 5 7 **Total Land** 414 410 4 390 20 26 Total Mean land-holding 4.22 4.14 1.41 4.43 2.98 3.22 No. of Land Owners 212 21 17 125 106 16 **Total Land** 894 87 24 554 316 52

Source: Field Surveys

* Note: The total tally is that of land and not the number of farmers, except in the case of women land owners. This is because, several farmers own both the types, viz., irrigated and unirrigated land. Similarly, a few farmers also hold both types of land - cultivable and uncultivable. Therefore, the number of land owners may not add up across these categories.

HH Under Seasonal Migration (No)		Migration Last Season	Migration during Last 4-5 Months	
	(1)	(2)	(3)	
The Dangs	Mean	1.49	1.43	
	Number of HH	49	42	
	Members	73	60	
Washim	Mean	1.25	1.25	
	Number of HH	12	12	
	Members	15	15	
Khargone	Mean	1.67	1.67	
	Number of HH	6	6	
	Members	10	10	
Total	Mean	1.46	1.42	
	Number of HH	67	60	
	Members	98	85	

Annexure - III Migration during Last Season and Now

Annexure - IV Secondary Occupation of the House-holds

Sr. No.	Secondary Occupation of Household Head	Frequency	Percent
(1)	(2)	(3)	(4)
1	Agriculture	19	6.32
2	Agriculture Labour	106	35.33
3	Livestock Rearing	47	15.74
4	Non-Agriculture Labour	13	4.35
5	Government Service	3	1.06
6	Private Sector Service	5	1.77
7	Self Employed	12	4.08
8	Contractor	2	0.7
9	Any Other	1	0.3
	Total	208	69.3

Source : Field Surveys.

Sr. No.	Type Of Business	Number	%age
(1)	(2)	(3)	(4)
1	Hardware	7	12.1
2	Xerox /Photocopying/ Computer	5	8.6
3	Mobile Recharge/Repairing/Parts	4	6.9
4	Karana Shop (Grocery)	4	6.9
5	Village Restaurant	4	6.9
6	Pan Shop& Cigarettes shops	3	5.2
7	Tailoring	3	5.2
8	Auto Rickshaw	3	5.2
9	Cold drinks/soda stall	3	5.2
10	Bicycle repair/puncher repair shop	2	3.4
11	Stationary /Gift Items	2	3.4
12	Vegetable selling	2	3.4
13	Auto Repair	1	1.7
14	Footwear Shop	1	1.7
15	Readymade Garment	1	1.7
16	Cloth Shop	1	1.7
17	Tea Vendor	1	1.7
18	Beauty Parlour	1	1.7
19	Dairy Parlour	1	1.7
20	Travel Service	1	1.7
21	Food Cart (Egg Items)	1	1.7
22	Food Cart (Peanuts/Gram etc.)	1	1.7
23	Laundry	1	1.7
24	Cutlery Store	1	1.7
25	Toy Vendor	1	1.7
26	Computer Centre	1	1.7
27	Sweet Shop	1	1.7
28	Micro manufacturing unit	1	1.7
	Total	58	100.0

Annexure - V Typology of the Business Covered in the Survey

RESOURCES, OWNERSHIP AND BASIS OF INEQUALITY: EVIDENCE THROUGH HOUSEHOLD ANALYSIS OF A PUNJAB VILLAGE

Baldev Singh Shergill, Manjit Sharma and Satjeet Singh*

Ownership of resources and evolving development processes around land lead to structural inequalities in a village in which originates economic inequalities and strengthens social stratification in certain social and institutional settings. The landless households which belong mostly to the schedule caste and backward caste categories have been dispossessed of their land ownership since the colonial period when the permanent land settlements process started in the Punjab region. High inequalities registered across landed households and landless households were found among three main categories of caste- based households while examining productive assets as well as household assets at the household level in the village under study. Correspondingly, income shares across households. Forward caste households achieved a privileged position in terms of education attainment, landholding and assets as compared to backward caste and schedule caste households. This paper also examined the estimates of Gini coefficients and other tools which described very high levels of inequalities across economic and social classes led to persistent inequalities- in education, income, household assets and productive assets in the village.

Key Words: Household Analysis, Land inequality, income inequality, Punjab village

1. INTRODUCTION AND BACKDROP

Before the colonial period (prior to 1849), the Punjab economy was primarily a traditional agrarian economy in terms of production relations, earnings, occupation and exchange. The rural sector comprising agriculture, and ancillary activities such as animal husbandry and forestry was the foundation of the economy and the principal source of livelihood. The motivation of the paper was driven by the urge to trace structural changes and institutional development in the context of land ownership, agricultural production and productivity, techniques of production, infrastructural developments and public policy framework on agrarian development in the Punjab which served as the basis of inequalities emerging among village communities from the onset of British rule to contemporary times.

During the colonial period (1849-1947), economic historians and sociologists have

accepted the view that the process of agricultural colonisation transformed the Punjab region into centre of agriculture commercialisation measured in terms of a number of indices regarding increase in agricultural output, irrigation facilities, new investments, scientific and technological innovations, market expansion, trade, socioeconomic and demographic engineering through private land ownership which revealed immense unutilised resources and changed the way of life. Nevertheless, Punjab remained an underdeveloped or a backward region. The basis of this backwardness and inequality in ownership of resources can be traced through various aspects an important one being land distribution which sought to consolidate the colonial political position, to fulfill military requirements and to maintain a good extractive system. Land was allotted predominantly to landholding upper caste groups. The landed community maintained and consolidated their dominance that they already enjoyed, with the

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result that the social structure became more rigid. The landless were denied access to land and they found livelihood opportunities as agricultural labour at the village. This led to the process of economic development that was hostile to an economic transformation. As a result, the overall growth rate of total food grain output was no more than one per cent between 1907 and 1947, which was less than the growth in the provincial population during the period [Pray, 1984]. The first 50 years of British rule represent an episode in the economic history of the Punjab similar to the private appropriation of the village as observed from the fifteenth to the eighteenth-century Europe. Between 1855 and 1891, the cultivated area increased from 15.3 million acres to 26 million acres, i.e., by 10.7 million acres, while the canal irrigated area increased by about 2.5 million acres [Calvert, 1922]. Considerable efforts were made for the development of agricultural science and technology in the province from the onset of the late nineteenth century. This development involved a two-sided process of continuity and change in which the old modes and practices continued to exist and were modified along with the new innovations. On the whole, in the first half of the nineteenth century, the traditional mode of cultivation was followed predominantly. In the second half, western technology was introduced successfully which contributed greatly towards agricultural development. These new scientific and technological innovations went a long way in the mechanisation of agriculture and transformed the medieval character of agriculture in Punjab into a modern one [Singh, 1982].

There were various factors responsible for the continuous process of increasing economic backwardness and peasant indebtedness: growing dependence on the market, increasing vulnerability to fluctuations in the market prices, fall in agricultural prices, burden of fixed money payments such as taxes, water charges or interest, natural calamities like famines and bad weather, borrowing for consumption purposes and for working capital and the poor credit system.

As a matter of fact, during the Mughal and Sikh periods, the concept of a village community was mainly confined to the landed interest of the proprietors of agricultural land and the relationship with the low caste menial functionaries in the village [Grover, 1966; Banerjee, 1982]. This system succeeded during the colonial and postcolonial period. The partition left east Punjab a deficit area as agrarian development processes during colonial period took place in the west Punjab in a big way that was bound to affect the economy. A large amount of public investment on irrigation by the British state was done in West Punjab. East Punjab had all the features of economic backwardness such as traditional agriculture, inadequate infrastructural development, unequal land distribution and underdeveloped manufacturing sector. From the above discussions, it can be argued that economic growth of the region was isolated, sporadic and short-lived during the colonial period.

While analyzing the post-colonial agricultural situation, Bhalla and Singh [1996] opined that rapid agricultural transformation is a potent instrument for bringing about significant acceleration in the overall growth and transformation of a labour surplus economy dominated by the agricultural sector. It is notable that the agricultural breakthrough in Punjab stimulated growth of manufacture and service sector of the economy. but not as much as it had resulted from similar breakthroughs in other regions or countries, perhaps because of the large net outflow of capital from Punjab. Rapid agricultural growth, by raising the income of an overwhelming large proportion of the labour force, not only made a deep dent in the rural poverty but also led to the development of other sectors through forward and backward linkage effects. The Punjab experience demonstrates that it is possible for a region within
a large country to enjoy the fruits of specialisation and comparative advantage through trade and integration with the rest of the country. Its rapid overall growth was due primarily to the state's large investments in infrastructure. Also, Gill [1994] examined Punjab's agriculture and found that it has experienced capitalist development at a relatively fast rate since 1965-66. A section of peasantry having greater command over land and capital resources had been transformed into capitalist farmers. In 1990-91, top 6.01 per cent of farmers operating 10 hectares and more operated 26.70 percent of the area farmers with 4 hectares and more constituted 29.41 of total farmers and operated 66.92 percent of the area [Directorate of Agriculture, 1992]. These farmers owned capital assets such as tractors, threshers, pump sets, etc., much more than the proportion of land held by them.

Likewise, Gill and Singh [2006] argued that the Punjab economy has grown at a rapid rate since the ushering in of the green revolution. Economic prosperity and lead of Punjab state in terms of per capita income is, however, now history and other faster growing states are quite close in suppressing the long-sustained lead. This has been due to the fact that development process in Punjab is coming to a halting stage in the post liberalisation regime. Deceleration of economic growth of the Punjab economy, in general, and agricultural sector, in particular, has accelerated the crisis of the capitalist path of economic development especially in the context of liberalisation and globalisation. The onset of the green revolution had given tremendous boost to the economy by bringing sharp increases in income, production, and productivity for all classes of agriculturalists. However, the boost was short lived-with productivity declining over a period of time, income dipping due to increased cost of production but a near freeze in minimum support prices, and with large numbers rendered unemployed due to mechanisation of agricultural operations and lack of alternative employment

opportunities. Price stagnation in the agricultural sector, and non-descript development of the other sectors of the economy saw the beginning of a crisis which has reached an unprecedented level, even to the extent that cultivators have been forced to take their own lives rather than live a life of extreme poverty, mounting debt burden and the agony of not being able to pay back the debts. The farming community of the village got overburdened with increasing debt [Shergill, 2010]. Arguing on similar lines, Gill [1994] examined capitalist development in Punjab agriculture and stated that is has had differential effects on the different sections of the peasantry. Capitalist farmers have been the largest beneficiaries and have produced more than what is required for family consumption. The better-off sections in the rural areas, the class of emerging capitalist farmers, have come to dominate the rural life, wield decisive influence on political process and power in the state. Further, village institutions have come under their control.

On the other hand, Singh [2011] examined the post-reform economic growth pattern of the Punjab economy and clearly brought out that the dominant sectors of Punjab, which contributed 68.52 per cent of the net state domestic product at the beginning of reform period, have experienced deceleration in economic growth. The major constraints that have impinged upon the development process of the Punjab economy are structural rigidities, macroeconomic policies, human capital development, low investment-GSDP ratio, demand and supply factors and non-economic factors such as social, political and an active international border.

India's most successful experiment in the context of rural development in Punjab, with a focus on agricultural development in a conducive institutional framework, supported by adequate socio-economic infrastructure, seems to be going aground. As development is a continuous process of change- economic, technical and institutional

issues, if unattended to, it could assume alarming proportions, gradually culminating in a serious crisis. This is exactly what Punjab is confronted with at present [Dhesi and Singh, 2008]. The differentiation in terms of variations in land ownership in the farming community in the wake of capitalism in agriculture has undermined the collective conscience or collective community orientation which had provided a protective cover to peasantry over the years. This has also undermined the jajmani system in which members belong to landless households performed various functions for land owning household and did receive necessary commodities in return which protected agricultural labour and other rural population in difficult situations. Presently, the poor farmers in distress and in debt trap have no protective mechanism either from the community or the state. When pressurised for recovery by credit agencies (formal or informal) and insulted in public leading to loss of face causing social shame, a large number of farmers have fallen prey to the phenomenon of suicides [Gill, 2013].

From the colonial period to contemporary times, it is well recognised that the model of agricultural development implemented by the different states benefitted only small sections of peasantry. Lacking long term structural policies, it proved to be advantageous to certain sections of the society and led to disproportionate resources allocation and ownership inequalities across economic class and social order in the village economy of Punjab. Economic transformation of Punjab led to emergence of low productivity and high productivity regions and from a 'backward to a less developed' economy which has resulted in a flawed and suicide-prone economy in the current times.

It is against this background that this study has been undertaken. The paper is divided into four sections including the introduction to the village. Section two describes the basic information of the village. Section three has two parts wherein the first part describes the basic economic indicators such as households' characteristics and literacy rates among socio-economic class at the village level while in the second part, land holdings, ownership of household and productive assets and income distribution among social and economic classes are examined. Section four presents the conclusions of the study.

2. THE STUDY VILLAGE

This research was based on fieldwork and formal data collection at the household level in Sekha village of Punjab over one year, 2012-2013. Sekha village is located in Ludhiana district. This is the first district of the state where the Intensive Agriculture District Programme (IADP) was launched in 1960-61 and this district is also known as a highly developed district. This was the reason to choose a village from the highly developed district to examine the asset ownership and income inequalities across economic and social classes. The village is 15 kilometers away from the tehsil headquarter and 32 kilometers away from the Ludhiana district headquarters. The nearest town is Maloud which is 3 kilometers and connected to the village with a pucca road. The village has a post office, a primary health center, primary and a high school.

The village under consideration was fully segmented with respect to religion, caste and occupation. Forward caste households occupied agriculture and allied activities owing to ownership of land in the village. Schedule castes and other backward castes were landless and comprised the working class engaged in jobs, selfemployed or as casual labour in farm and nonfarm activities.

3. THE EMPIRICAL EVIDENCE

Before examining the resource distribution and ownership inequality, it is fundamental to level: population structure and literacy rate by **Economic Class in the Village** socio economic categories.

Part 1: Household characteristics and Literacy rate at the Household Level

study the basic economic indicators at the village **Distribution of Population by Social and**

Table 1 reveals the distribution of population of the chosen village across caste groups and gender.

	Households	Male	Female	Total	Percent
(1)	(2)	(3)	(4)	(5)	(6)
Forward Caste	92	258	256	524	48.25
Backward Caste	23	64	57	121	11.14
Schedule Caste	82	224	217	441	40.61
Total	197	546	530	1,086	100.00

Table 1. Distribution of Population by Social Class

Source: Field Surveys.

There were 197 household out of which 91 households belonged to general category, 23 households belonged to backward caste category and 83 households were under the schedule caste category. In Sakha, a relatively small village, of a total population of 1086, 556 are males and 530 are females. The general caste and backward caste categories constituted sixty percent of total population. The percentage share of schedule caste population was 40 percent which is very high as compared to the state level schedule caste population share which is 32 percent [Shergill et. al., 2018].

A perusal of Table 2 shows the distribution of households according to occupation.

Landlords/ big capitalist constituted just 0.5 percent share of the economic class which was in the bracket of 25-50 acre holding of land. There were 4.5 percent capitalist farmers/ rich peasant who owned between 15-25-acre landholding. Only 5 percent of the population owned more than 15-acre land among the peasant community. Peasants who belong to upper middle (10-15 acre), lower middle (5-10 acre), small peasants (2.5-5 acre) and marginal peasants (0-2.5 acre) had approximately had 10 percent share each. The number of non -agricultural labourers was approximately 2.5 times more than casual labourers in agriculture. The self-employed constituted only 6 percent. Salaried class which constituted 14.7 percent of the total population was 2.5 times more than the self-employed category. This Table confirms two broad propositions: one, Punjab peasantry consists of small landholding proprietorship and, second, a big share of casual labour was involved in the nonfarm sector while employment opportunities have been shrinking in the farm sector overtime. It also shows the dependence of landless community over land has declined overtime and consequently, there has been an increase in non-farm economic diversification, at present, in the rural economy.

Socio-Economic Class	Distribution o	f Population	Households (Perce	entage Share)
	Size of holdings (in acres)	Number of Households		
(1)	(2)	(3)	(4)	(5)
Landlord/Big Capitalist Farmer	50 and above	0	0	
	25-50	1	0.5	
Capitalist Farmer/Rich Peasant	20-25	3	1.5	
	15-20	6	(1 Retired from Military Services, Dealer)	3
Peasant: Upper-Middle	10-15	19	(3 Salaried)	9.5
Peasant: Lower-Middle	5-10	21	(3 Self- employed)	10.5
Peasant: Poor				
Small Farmer	2.5-5	20		10
Marginal Farmer	0-2.5	22		11.5
Casual Labour in Agriculture		15		7.6
Casual Labour in Non-Agriculture		41	4 Agriculture Labour	20.8
Self Employment		11	(12 Farming)	6
Salaried Persons		29	(10 Farming)	14.7
Others		9		4.4

Table 2. Distribution of households by occupation

Source: Field Surveys.

Literacy Rate by Social and Economic Class

Literacy rate is a crude measure to examine the state of education in the village across social and economic classes. From Table 3, it is seen that the literacy rate was 78.63 percent in the village. Literacy rate of the male population was 81.83

percent was more than that of the female population, namely, 75.28 percent. The Table presents a general phenomenon which was noticed in course of the study. Difference of literacy rate of male and female was very low in general category and highest in schedule caste category.

Caste	То	tal Literate Pers	ons		Literacy Rate	
	Male	Female	Total	Male	Female	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
General Caste	268(221)	256(201)	524(422)	82.46	78.51	80.53
Backward Caste	64(54)	57(44)	121(98)	84.37	77.19	80.99
Schedule Caste	224(180)	217(154)	441(334)	80.35	70.96	75.73

Table 3. Literacy Rate by Social Class

Source: Field Surveys.

Table 4 reveals that the literacy rates of different socio-economic classes in the village.

Economic Class	Size of hold-		Literate					Percentage		
	ings (in acres)	Male	Female	Total	Male	Female	Total	Male	Female	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Landlord/Big	50 and above									
Capitalist	25-50	4	3	7	3	2	5	75.00	66.67	71.43
Capitalist Far-	20-25	13	10	23	11	8	19	84.62	80.00	82.61
mer/Rich peasant	15-20	20	18	38	15	15	30	75.00	83.33	78.95
Peasant: Upper- Middle	10-15	63	65	128	53	50	103	84.13	76.92	80.47
Peasant: Lower- Middle	5-10	65	62	127	53	48	101	81.54	77.42	79.53
Peasant: Poor										
Small- Farmer	2.5-5	57	50	107	46	38	84	80.70	76.00	78.50
Marginal Farmer	0-2.5	57	55	112	50	46	96	87.72	83.64	85.71
Total Peasantry		279	263	542	231	207	438	82.80	78.71	80.81
Labour										
Casual Labour in Ag	riculture	41	39	80	32	30	62	78.05	76.92	77.50
Casual Labour in No	n-Agriculture	104	99	203	78	62	140	75.00	62.63	68.97
Self Employed		31	25	56	26	19	45	83.87	76.00	80.36
Salaried Person/s		82	91	173	73	71	144	89.02	78.02	83.24
Others		19	13	32	15	10	25	78.95	76.92	78.13

Table 4. Literacy rate by Economic Class

Source: Field Surveys.

Lowest literacy rate (68 percent) among economic category was found in casual labour in non-agriculture. Second lowest literacy rate (71 percent) was registered amongst landlords/big capitalists. It can be easily understood, why literacy rate was very low in the casual labour households. This economic class did not have any productive assets and mainly depended on daily wages for their livelihoods. It is obvious that in the context of a hierarchy of needs, educational attainment was not among the priorities of those households which survived hard life. Literacy rate in marginal farmer households (85 percent) was recorded highest among all the categories. It is quite surprising and beyond explanation that literacy rate of salaried persons (83 percent) and rich peasantry (82.6) was lower as compared to marginal farm household category. While, our field survey observations endorse the view that among the marginal farmer category, they were supported by their relatives who were abroad and relatively rich and they supported only for the education of school going children. Literacy rate of all socio-economic classes except casual labour in non-agriculture was higher than the overall literacy rate of Punjab. Male literacy rate is higher as compared to female literacy rate among all socio-economic classes. Difference of literacy rate of male and female is highest in casual labour in non-agriculture and lowest in casual labour in agriculture. Highest male literacy was noticed in salaried persons and lowest in landlord and casual labour in non-agriculture categories. Further, male literacy rate was the same in casual labour in non-agriculture and in landlords/ big capitalist. Highest female literacy rate was noticed in marginal farmers and rich peasantry. However, the lowest female literacy rate was in casual labour in the non-agriculture class.

PART 2. DISTRIBUTION OF OWNERSHIP OF RESOURCES: LAND, PRODUCTIVE AND HOUSEHOLD ASSETS

In agrarian societies, land serves as the main means not only for capital accumulation but also for transferring capital to future generations because of the system of private property rights implemented by the state. It then becomes important to understand how land rights that were assigned determined households' ability to generate subsistence and income, their socioeconomic status; their incentive to exert non-observable effort and make investments, and often also their ability to access financial markets or to arrange for smoothing of consumption and income [Deininger and Feder, 1998]. Land has been always been considered as one of the important productive assets overtime at the village level.

Table 5 gives the Ownership of Land Holdings by Economic Class.

From the figures given in Table 5, it is seen that the average land holding among the farming community was 6.96 acre but average landholding among the landed and non-landed community was 3.25 acre. Big landowning households who constituted one percent of the total households held 5.4 percent of the land. They held five times more land viz-á-viz household percentage share among the landed community. Very interestingly, marginal farmers owned mere one fifth share of land (4.79 acre) compared to household percentage share (23.49) among land owning households. Average landholding of big landlords (35 acre) was 25 times more than marginal farmers whose average landholding was 1.39 acre. Big landlords had 2.5 times land share as compared to their households' percentage share among agricultural community. Rich peasantry and upper middle peasantry owned 2 times and 1.5 times percentage land share respectively among landowning households. But the reverse pattern was observed from lower peasantry side whose percentage share of land (19.82) was less as compared to household percentage share. In case of small farmers, percentage share of land (9.75) was half as their percentage household share. Average landholding of big landlords was 14 times, of rich peasantry was 11 times, of upper middle peasantry was 8 times, for lower middle peasantry was 4 times and for small farmers was 2 times more as compared to marginal farmers. The Table clearly reveals that there was a high degree of variation of ownership of land between the landowning and landless households and even within landowning households. The landless households which belong to either schedule caste or backward caste categories had been dispossessed from land ownership since the colonial period when the permanent land settlements process started in the region. Though land holdings are very far from being equal, the village in question has always been known as a region of smallholders' agriculture.

Socio-Economic class	Size of Holdings (In Acres)	No. of Families	Land Holdings (In Acres)	Average Land Holdings (In Acres)
(1)	(2)	(3)	(4)	(5)
Landlord/Big	50 and Above	Nil		
Capitalist Farmer	25-50	1 (1)	35 (5.40)	35
Capitalist Farmer/Rich	20-25	3 (3.26)	60 (9.36)	20
Peasant	15-20	6 (6.52)	100(15.60)	16.16
Peasant: Upper-Middle	10-15	19 (20.65)	225.5 (35.19)	11.86
Peasant: Lower-Middle	510	21 (22.82)	127 (19.82)	6.04
Peasant: Poor				
Small Farmer	2.55	20 (21.74)	62.5 (9.75)	3.12
Marginal Farmer	0-2.5	22 (23.91)	30.75 (4.79)	1.39
Total		92	640.75	
Average Holding Among Peasant Households				6.96
Average holding Among Total Households in the Vil- lage				3.25

Table 5. Ownership of Land Holdings by Economic Class

Source: Field Surveys

Inequality in the Ownership of Productive Assets by Socio-Economic Class

ownership of productive assets across households, Table 6 shows the share of productive assets with and without land by economic class.

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To understand inequality in terms of the economic class.

Socio-Economic Class	Size of Land Holdings (In Acre)	Share of Households	Share of Productive Asset (Without Land)	Share of Productive Asset (With Land)
(1)	(2)	(3)	(4)	(5)
Landlord/Big Capitalist Farmer		50 and Ab	ove	
		25-50		
Capitalist Farmer/Rich Peasant		20-25		
		15-20		
Peasant: Upper-Middle		10-15		14.72
Peasant: Lower-Middle		5-10		10.65
Peasant: Poor				
Small Farmer		2.55		10.15
Marginal Farmer		0-2.5		11.17
All Landless				53.31

Table 6. Share of Productive Assets by Economic Class

Source: Field Survey and figures are in percentage.

Fifteen percent households (peasantry of upper and lower middle class) which had ten acres or more land ownership owned fifty percent share of productive assets without land. These fifteen percent households had more than three times share of productive assets viz-á-viz their household share of population. It is reasonably comprehensible from field surveys that the price of land was increasing at a fast pace in the village as percentage share changes by twelve to fifteen percent when land assets are included. A noteworthy point to mention is that while fifteen percent of households had ten acres or more land, their share in productive assets increased by fifteen percent when land as an asset was included. Lower middle peasantry (5-10 acres) which had ten percent share of household's population also had a double share (27%) in productive assets without land, but when land as an asset is included then this share declined to twenty percent. There are reasons because this class owned less land as compared to the upper strata of the village. Small farmers (2.5-5 acres) had almost same percentage share of household population and productive

assets, (i.e., approximately ten percent each). Eleven percent marginal farmers owned 2.72 percent share of productive assets without land, but this share reached to around double (5 %) when land as an asset was included. But on the other side of the story, fifty three percent landless households owned percentage share of productive assets which was less than ten percent and this share further slipped to 0.02 percent if land asset was included. It reflects the high market value of land such that ownership of land results in high share in productive assets. It reveals a pathetic situation which shows that half the population of the village was devoid of productive assets. Marginal farmers and landless community constituted two-third percentage share (64.48%) of households' population but occupied only one-eighth percentage share (12%) of productive assets without land but this share further decreased to one twentieth (5%) when land as an asset was included. Remaining thirty three percent households owned forty two percent shares of productive assets when land was not included. If land asset was included then this share reduced to thirty five percent, i.e., share of these thirty three percent of households (marginal farmers and lower middle peasantry) in productive assets declined by seven percent when land as an asset was included.

Punjab have maintained their hegemony and social segmentation on the basis ownership of productive assets at the village level. [Jodhka, 2002 and 2016] It is evident from Table 7 that there are wide inequalities when share of productive assets with or without land was calculated.

Since time immemorial, forward castes in late

Category	Share of Households (In Percentage)	Share of Productive Assets Without Land (In Percentage)	Share of Productive Assets With Land (In Percentage)
(1)	(2)	(3)	(4)
Forward Caste Backward Caste	46.19 11.67	94.93 1.83	97.71 2.03
Schedule Caste	42.14	3.24	0.27

Source: Field Surveys

The Table shows that forty six percent households of the village belonging to forward castes had ninety four percent share of productive assets when land was not included as an asset. But when land as an asset was included then this share improved slightly and touched to ninety eight percent figure. Further, with almost the same share, scheduled caste households (42%) had only 3.24 percent share of productive assets, when land was not included as an asset. But when land was included then this share declined to 0.02 percent figure (Table 6). Our research findings clearly show that when land as an asset was included in productive assets then distribution of percentage share turned skewed in favour of the rich peasantry and land lords. The Table also reveals that the ownership of productive assets without land was very much similar with ownership of landholdings. It is the general opinion that forward castes and scheduled castes are poles apart as far as share of productive assets is concerned and this has been verified by our empirical observation. Further, decline in the percentage share of productive assets of scheduled caste population shifted in the favour of the general caste population, when land as an asset was taken into consideration. Percentage share of Backward caste in productive assets increased slightly whether land as an asset was included or not. Numbers from Table 7 are also shown in Figures 1, 2 below.





Ownership of Household Assets by Socio-Economic Class

Ownership of household assets reveals the differences in the level of living among different household categories and each household's share

depends on the income and productive asset ownership of the household. Table 8 shows the comparison of household assets share and income share with respect to household share among different economic classes.

Economic Class	Size of Holdings (in Acres)	Households (In Percentage)	Household Asset Share (Percentage)	Income Share (Percentage)
(1)	(2)	(3)	(4)	(5)
Landlord/Big Capitalist				
Farmer				
50 and Above				
25-50				
Capitalist Farmer/Rich	20-25			
Peasant	15-20			
Peasant: Upper-Middle	1015			
	Above 10	14.72	45.17	41.61
Peasant: Lower-Middle	510	10.65	13.11	14.37
Peasant: Poor				
Small Farmer	2.55	10.15	9.01	9.38
Marginal Farmer	0-2.5	11.17	6.97	5.30
All Landless		53.31	25.74	29.34

Table 8. Share of Household Assets and Income by Economic Class

Source: Field Surveys

It is clear from the Table 8 that 14.72 per cent households (big landlord and rich peasantry) were having forty five percent household assets share in the total assets of the village. They held approximately three times more share in households' assets as compared to their percentage share of households. Also, a cause of concern is that landless class which constituted fifty three percent share of households had only 25.74 percent share in household assets, i.e., percentage share of household's assets was half of the percentage share of households. Remaining thirty-three percentage households had twenty nine percent share of household assets. Proportionate share of households and household assets was more or less equal for this group. Marginal farmers (0-2.5 acre) had eleven per cent share of households while they possessed only seven percent share of household assets. The field survey observations endorse the fact that it was very easy to identify a household which owned fewer household assets when we looked at the condition of the house from outside during the field work. And most of the landless households which belonged to schedule caste category can also be easily identified with regard to their geographical location in the village setting. It points out to the fact that uneven ownership of the household assets influenced the occupation, earnings and educational attainment. If they own more resources, they of course are the owners of more household assets and vice versa. A very surprising fact revealed during the field work was that more than ninety percent of the household assets were the dowry gifts from daughter-in-law's parents in the landowning households and on the other hand, landless households bought household assets either on installments or as second-hand purchases from the landowning community.

Similarly, Table 9 shows the comparison between percentage share of households, household assets share and income share across social classes.

Table 9.	Share of	Household	Assets	and	Income	by	Social	class
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Category	Percent Share of Households	Household Asset Share	Income Share
(1)	(2)	(3)	(4)
Forward Caste	46.19	74.41	70.20
Backward Caste	11.67	5.52	5.88
Schedule Caste	42.14	20.08	23.83

Source: Field Surveys.

It is evident from the Table that for the category whose population share was less than fifty percent (46.19%) owned seventy four percent households' asset, i.e., approximately 1.5 times more than their population share. Backward classes and scheduled castes owned only half share of household assets (5.5% and 20% respectively) as compared to their percentage share of population (11% and 42% respectively). It is disturbing to note that while the combined share of population of the backward class and the scheduled caste class is more than fifty percent (54%), their percentage share of household assets is only one fourth of total household assets of the villages. These two social classes earn their livelihood from nonfarm economic activities except for a few who are salaried and pensioners. In non-farm activities, they were employed in low skilled occupations and therefore earnings were low and assets ownership eventually were relatively scanty.

Income Distribution across Households in the Village

Table 10 shows the percentage income share of economic classes with respect to decile group. Also shown in Figure 3 below Table 10.

Table 10. Share of Different Deciles of the Income Share of Total Households

Households	Income Share (In Percentage)
(1)	(2)
Тор	38.94
Second	18.27
Third	12.45
Fourth	9.23
Fifth	6.56
Sixth	5.26
Seventh	3.91
Eight	2.89
Ninth	1.97
Bottom	0.59

Source: Field Surveys

Ten percent of the richest population of villagers had thirty percent share of income while ten percent bottom population occupied less than one percent share of income. Further, upper thirty percent share of the population had seventy per cent share of income, while poor thirty percent populations had only six percent share of income. In between these two extremes, middle forty per cent population of village occupied one fourth share of income. It is only the upper thirty per cent population of the village who were the owners of productive assets as well as income share. But poorest thirty percent people of the village were living in distress. Lives have become very difficult for poor peasants and the landless community and have become prone to suicides change the structure. Singh [2008] analyzed variations in income across three districts in Punjab and found that that the lowest 40 percent population in all the selected three districts had less than 13 per cent share in total income. But on the other side, the richest 20 percent population of each district has more than 50 per cent share in the total income. The share of middle 40 per cent population varies from 30 per cent to 38 per cent. It is observed that income inequality among social and economic class documented in the rural economics literature by noticing the inequalities in land ownership and household assets share across households in the village.



Measurement of Inequalities

In this section, we examine the land inequality and asset inequality with the help of percentage share across households at the village level. The Gini-coefficient is used to measure the economic inequality which measures the degree of income distribution among population and Lorenz curve represents the graphic distribution of income inequality across households. We used Ginicoefficient and Lorenz Curve to examine the degree of income inequality and asset ownership inequality across households in the village.

Inequalities in Productive Assets across Households in the Village

Table 11 explores the productive assets share variations across economic categories including land and other productive assets.

Techniques	Productive Assets (Without Land)	Productive Asset (With Land)	Productive Assets within Peasantry (With- out Land)	Productive Assets within Peasantry (With Land)
(1)	(2)	(3)	(4)	(5)
Gini Coefficient Concentration Coefficient	0.769 0.773	0.730 0.733	0.550 0.556	0.440 0.445

Source: Estimates based on Field Survey Data

Lorenz Curve of productive assets with land within peasantry along with a value of Gini Ratio as 0.440 was less skewed than that for productive assets without land within peasantry with a value of ratio as 0.550. The Lorenz curve for the productive assets without land among the total sample was more skewed with the Gini coefficient as 0.769 and it was in the case of productive assets with land among the total sample with the value of Gini coefficient as 0.730. This clearly shows the high degree concentration of ownership of resources among few rich rural households and peasantry community in the village. Results from Table 11 given in Figures (4 (i), (ii), (iii) and (iv) below

Figures 4 (i), (ii), (iii) and (iv):

LÖRNEZ CURVE WITH RESPECT TO PRODUCTIVE ASSETS

4 (i) Lorenz Curve of Productive Assets Without Land





4 (ii) Lorenz Curve of All Productive Assets Including Land

4 (iii) Lorenz Curve Of Landowning Households of Productive Assets Without Land



4 (iv) Lorenz Curve of Landowning Households of All Productive Assets Including Land



Income Distribution Inequalities across Households in the Village

Table 12 explores the income inequalities across households through various techniques in the village.

0.611 for big and marginal farmers to 0.459 for within landed community confirmed skewed distribution of income among landholding groups. The Gini ratio of entire economic class was 0.528 which indicated high degree of inequality. Results from Table 12 given in Figures (v), (vi), (vii), (ix) and (x).

The Lorenz curve along with Gini ratio as Figures (v), (vi), (vii), (viii), (ix) and (x).

Technique	Total economic class	Big and Marginal	Big and Small	Large and Lower Middle	Large and Upper Middle	Rich and Large	Within Peasantry
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Gini Coefficient	0.528	0.611	0.431	0.347	0.279	0.262	0.459
Concentration Coefficient	0.531	0.640	0.454	0.363	0.294	0.291	0.464
Categories		22	20	22	20		90

 Table 12. Income Share Variations among Economic Classes

Source: Estimates based on Field Surveys

Figures 5 (i), (ii), (iii), (iv), (v) and (vi) LORNEZ CURVES REGARDING INCOME INEQUALITY HOUSEHOLDS

Fig. 5 (i) Curve Regarding all Households in the Village





Fig.5 (ii) Curve Regarding Big & Small Farmer Households





Fig 5 (iv) Curve Regarding Big & Lower Middle Farmer Households





Fig 5 (v) Curve Regarding Big & Upper Middle Farmer Households





Some Conclusions

This study is a micro empirical study based on a village, Sekha of Punjab. The authors have attempted to examine the inequalities with regard to land ownership, means of income, household assets and productive resource ownership among the economic and social classes in the village. The study explored the alarming inequality in ownership of resources by economic and social class. The implications of resource allocation particularly land came up in regard to household assets, productive assets and income earnings inequality. Estimates of Gini coefficients also suggest very high levels of inequality involving economic and social classes. A notable feature of the distribution of income across deciles is that there was very high concentration at the very top end of the distribution. The outsised inequalities among social and economic classes and within classes are noticed because land was allotted predominantly to landholding groups. The upper caste landed community maintained and consolidated their dominance that they already enjoyed over time. On the other hand, the landless community has been sought employment

opportunities as farm labour and nonfarm economic activities in and outside the village. As a final point, the findings of the study are demonstrative in nature to identify the grounds of persistent inequalities in the rural economy of Punjab which have been perpetuated due to uneven distribution of ownership of resources in the economy among social and economic class. The existing initiatives of public policy framework after colonial period while taking up multidimensional policy measures have not yet made a dent in terms of reduction of inequalities at various levels. It appears that there is a policy failure in the economic development process resulting in growing inequalities in the economic and social sphere of a village's life.

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ARE PRICES COUNTERCYCLICAL? EVIDENCE FROM INDIA

Mayank Gupta*

This paper tries to document the stylised facts of the business cycle relating to prices (WPI Core & WPI) & inflation with respect to output for India from April 2005 to October 2016 using various univariate trend-cycle decomposition techniques. Both prices (WPI Core & WPI) & inflation are countercyclical with respect to output. In addition, using static cross-correlations we observe that prices (WPI Core & WPI) lead output by one month & inflation leads output by two months. Further, we apply Granger causality in the frequency domain and obtain a unidirectional causal relationship from WPI Core to output in the medium run (3 months to 12 months) to the long run (beyond 12 months). We also obtain a bidirectional causality between WPI & output as well as inflation & output in the medium run to the long run.

Keywords: Business Cycles, Detrending, Price, Inflation.

1. INTRODUCTION

One of the important business cycle stylised facts of an economy is the movement between prices & output. Within the aggregate demandaggregate supply framework, if the movement of output is due to supply shocks, then prices are expected to be countercyclical. On the other hand, if the movement of output originates due to demand shock, prices are expected to be procyclical. Here, it is important to distinguish between cyclical behaviors of prices and inflation rate when reporting stylised facts on the business cycle. Possible business cycle models can be discriminated based on these stylised facts. Countercyclical behaviors of prices denote that prices and output are negatively correlated. It suggests that variation in real output must be an indication of supply rather than demand disturbances which shifts the aggregate supply of output along with a relatively stable negatively sloped aggregate demand curve. Procyclical behaviors of prices connote that prices and output are positively correlated. It suggests that variation in output is due to shifts in aggregate demand curve along a positively sloped aggregate supply curve caused by fluctuations in demand.

Until the decade of 1980's many researchers were of the opinion that prices are procyclical. This view was deeply embedded in the modeling of business cycles. Burns & Mitchell [1946] confirm the procyclical behavior of prices for major industrialised countries from 1854 to 1933. Lucas [1977] himself claims prices to be procyclical. Mankiw [1989] criticises the real business cycle models on the ground that they cannot explain why prices are procyclical. Olson [1989] argues that both new classical & Keynesian economists agree on the procyclical behavior of prices and hence advocate Lucas's [1977] view.

Friedman & Schwartz [1982] were the first to challenge the conventional view that prices are procyclical. Further, Kydland and Prescott [1990] report that cyclical components of prices and output are negatively correlated in the post-Korean war period using US quarterly data (1954-1989). Cooley & Ohanian [1991], using post-war and historical data for the US, analyzed the relationship between price & output. They confirm a negative correlation between price & output for the post-World War II period. Backus & Kehoe [1992] and Smith [1992] provide further evidence across ten industrialised countries complementing the above studies. For example, Backus & Kehoe [1992] examined the cyclical properties of real and nominal variables and conclude that prices are procyclical before World War II and countercyclical afterward. Thus, cyclical behavior of prices varies across time

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periods. Chaddha and Prasad [1993, 1994] point out that the rate of inflation rather than price level is more appropriate to measure the cyclical comovements between prices and output. They emphasize the necessity to distinguish between inflation and cyclical components of prices while interpreting & reporting stylised facts on business cycles. Using postwar quarterly data for US and rest of the G-7 countries, they find that the inflation rate is consistent and strongly positively correlated with the cyclical component of output. The cyclical components of prices and output are found to be negatively correlated. Kim [1996] examined the cyclical behavior of prices & inflation for Korea [1970-1995] & Taiwan [1959-1995]. He found that the cyclical components of price level & output are negatively correlated while cyclical components of inflation & output are positively correlated for both the countries. Pakko [2000] analyses the price-output relation in the frequency domain for the US. He finds that the co-spectra of the price-output relation displays certain common features which are robust across sample periods & detrending methods. Li [2015] using quarterly data for US [1959-2013] finds the price level to lead the output cycle by two-quarters and the inflation rate lags the output cycle by three-quarters. The author claims a Granger-causal relation from price level to output after noticing a positive phase shift of price level with respect to output.

1.1 Evidence from India

Apergis [1996] examines the cyclical behavior of prices for seven developing countries (Korea, Israel, India, Argentina, Brazil, Mexico, and the Philippines) from 1975 to 1993 using CPI & GDP data for prices & output respectively. The author using two different detrending techniques (first difference in logs & HP-filter) and concludes that prices and inflation behave countercyclically with respect to output, in the case of India. Further, he suggested that the results were in accordance with the real business cycle theory in which real disturbances (such as technology, productivity shocks) seem to drive the Indian economy.

Agénor et. al., [2000] documented the stylised features of macroeconomic fluctuations for twelve developing countries using quarterly data from 1978 to 1995. The study used a modified Hodrick-Prescott filter and Baxter-King filter to decompose all the macroeconomic series into trend and cycles. The authors reported the countercyclical behavior of price level (using CPI) and procyclical behavior of inflation with respect to output (using IIP) for India. The authors suggested that supply rather than demand shocks to be prominent in developing countries like India. Further, authors conveyed that the supply shock would mostly comprise of terms of trade shocks rather than a standard productivity shock as observed for developed countries. These terms of trade shocks would comprise both supply and demand side effects.

Ghate et. al., [2013] argued that key macroeconomic variables such as price (using CPI) & inflation (using CPI Inflation) data from 1950 to 2010. in India in the post-reforms period have become less volatile as compared to the prereforms period Further, they proposed that the volatility of these key macroeconomic variables was still high & consistent with those in other emerging market economies and that prices were more volatile than output.

In the light of the changing nature of business cycles in India in the post-reforms period, given that an increasing number of business activities are being directed through an organised business sector set-up, analysis & monitoring of business cycles assumed great significance [RBI, 2002]. One of the key stylised facts with respect to the Indian economy is the movement between prices (WPI Core & WPI) and inflation with respect to output.

The objective of the paper is to provide evidence of the cyclical behavior of prices (WPI Core & WPI) as well as inflation with respect to output for India using various univariate trend-cycle decomposition techniques (Hodrick-Prescott filter, Baxter-King filter, Christiano-Fitzgerald & Beveridge Nelson decomposition). The results show countercyclical behavior of prices (WPI Core & WPI) as well as inflation with respect to output. It is well known that temporary movements in the output result primarily from shocks to demand, while long-term movements are associated with movement in supply [Blanchard and Quah, 1989]. However, the countercyclical variation of prices (WPI Core & WPI) with respect to output reported in this paper suggests that even temporary movements in output may be due to supply disturbances. This suggests that supply-driven models of the business cycle would be a more appropriate representation than conventional demand-driven models. This paper also documents cross-correlations to detect phase shift of price & inflation relative to output. Further, a check is made for Granger Causality relationship between price-output and inflation-output in the frequency domain. The results show a unidirectional causality running from WPI Core to output while a bidirectional causality between WPI & output as well as in regard to inflation & output. The second section deals with the data & methodology used. The third section deals with the empirical results. The final section summarises the main results along with policy implications and provides a future framework for study.

2. DATA AND METHODOLOGY

The Technical Advisory Group of the Reserve Bank of India on Development of Leading Economic Indicators for the Indian Economy [RBI, 2006] noted that "Indian business cycles through the nineties are non-uniform. The variables isolated in the indicators differ from earlier studies. There is more representation of financial variables. Since change is rapid, particularly in the last few years, it may be worthwhile to redo the identification exercise of leading indicators for the IIP growth rate cycle, focusing on the period 2000 onwards. (p. 77)" Although this paper does not deal with leading indicators of the Indian economy but involves detrending of IIP series, we take the monthly IIP series (as a proxy for output), monthly WPI Core (excluding food, fuel & power) as well as monthly WPI as a proxy for prices¹ from April 2005 to October 2016. The reason for using WPI Core is that it excludes the volatile component in the WPI series that is fuel & power and food. The first difference in (log) price is interpreted as inflation (in this study we take the first difference of log (WPI) as inflation). The data for all the series were obtained from Reserve Bank of India (RBI) Database on Indian economy. Table 1 presents the descriptive statistics of all the variables used in the study. IIP & WPI-Core are having almost the same standard deviation. All the variables have been logarithmically transformed.

Variable	Proxy	Mean	SD	Min	Max
(1)	(2)	(3)	(4)	(5)	(6)
Log(IIP)	Output	5.04	0.17	4.60	5.29
Log(WPI-Core)	Price	4.56	0.16	4.28	4.75
Log(WPI)	Price	4.97	0.20	4.63	5.23

Table 1. Descriptive Statistics

2.1 Cycle Extraction

To examine the co-movements of prices and output over the business cycles, extraction of the cyclical components of prices & output is required. Examination of the business cycle empirically deals with the controversial issue of detrending [Canova, 1998]. According to Canova [1998], different detrending methods estimate different cyclical components. The researcher is thus confronted with the statistical problem of separating the trend-cycle component with various detrending procedures. The guidelines for an appropriate filter are based on Baxter and King's [1999] six objectives. However, Burnside [1998] with the help of spectral analysis showed that if definitions of business fluctuations are uniform across all detrending methods, business cycle properties of the variables are robust to the choice of any detrending techniques. In order to obtain the cyclical components, a majority of the business cycle literature has depended on either the Hodrick-Prescott filter, the bandpass filters proposed by Baxter and King [Baxter and King, 1999] or the Christiano-Fitzgerald filter [Christiano-Fitzgerald, 1999]. Accordingly, we considered an eclectic approach involving all the three filters along with Beveridge Nelson decomposition [Beveridge and Nelson, 1981] to detrend prices & output. This was to enable us evaluate the robustness of our results across various trend-cycle decomposition methodologies.

The Hodrick-Prescott filter (HP filter) is a widely used method which is used to extract a smooth trend from the time series, and the residual is the cyclical component. Following Ravn and Ulhig [2002] suggestion for monthly data, λ was set equal to 129600. According to Bjornland [2000], a limitation of the HP filter is that the findings of the business cycle facts are sensitive to different values of the smoothening parameter. An inappropriate choice of this parameter may result in business cycle facts which are at variance

with the data used. King and Rebelo [1993] emphasised that HP filtering seriously alters measures of persistence, variability & co-movement.

Baxter and King [1999] emphasised that the National Bureau of Economic Research (NBER) definition of a business cycle requires a bandpass approach that is retaining components of the time series with periodic fluctuations between 6 quarters (18 months) and 32 quarters (96 months), while suppressing components at higher (irregular) and lower frequencies (trend). Similar to other moving averages, observations are dropped from the beginning & end of the sample in Baxter and King filter (BK filter). The Christiano Fitzgerald filter (CF filter) is constructed on the same principles as the BK filter except that no observations have to be dropped in CF filter. The CF filter puts different weights to each observation and hence the filter is asymmetric, in contrast to the BK filter which assumes that the weight is fixed regardless of the number of observations making it symmetric. We used the NBER definition of business cycles (periodicity ranging from 18 to 96 months since we used monthly data) to extract cyclical components using BK & CF filters.

Beveridge and Nelson Decomposition (BN method) shows how to decompose any ARIMA (p. 1, q) model into the sum of a random walk plus drift and a stationary component, (i.e., the general trend plus the irregular model). The decomposition procedure is successful only when the series is non-stationary at levels and stationary at first difference. Beveridge-Nelson decomposition is not unique as a result it is sensitive to model specification [Enders, 1995].

2.2 Static Cross-Correlation Analysis

We considered the standard static correlation coefficient as a measure of cyclical co-movement of prices with the output which is given by,

where σ_{xy} represents the covariance between price & output. The lead-lag relationship between prices and output is detected by estimating the correlation sequence at various leads & lags between these two variables. These static crosscorrelations present the degree of cyclical comovements of prices with the output. However, the static cross-correlations are defined over the entire frequency range and do not allow for the separation of idiosyncratic components and common co-movements. For instance, when two series are correlated at mid-frequency (business cycle) but to a lesser extent at low frequencies (trend) then the estimated static correlation will be a mixture of these correlations, hiding inherent dynamic relationships.

2.3 Granger Causality in the Frequency Domain

Further, we tested for Granger Causality (GC) in the frequency domain. This study uses methodology proposed by Lemmens, et. al., [2008] to decompose causality between stationary time series of prices and output at cycles of different periodicities. The merit of using spectral density approach is that it provides an extensive view of the causal flow than a one-shot GC measure which is supposed to apply across all periodicities [Granger, 1969]. Also, decomposing GC over the spectrum provides a parallel insight into potential variations in the strength of GC over different frequencies [Lemmen et. al., 2008]. The details of the methodology are given in Appendix I.

3. EMPIRICAL FINDINGS

Since the monthly data spanned over a period of 15 years (April 2005 to October 2016), the data had to be seasonally adjusted & made stationary. Accordingly, the Beaulieu and Miron methodology for testing unit root in monthly data is applied [see Beaulieu and Miron, 1993]. Beaulieu and Miron [1993] used the approach developed by Hylleberg, et. al., [1990] to derive the mechanics of another procedure for testing seasonal unit roots using monthly data. The IIP series exhibited seasonal unit root at π and +/- $5\pi/6$ frequencies. As a result, the second difference was conducted twice to give a seasonally filtered IIP series. The WPI Core & WPI series exhibited seasonal unit root at +/- $\pi/2$, +/- $5\pi/6$ & +/- $\pi/6$ frequencies. As a result, the fourth difference was conducted once to obtain a seasonally filtered WPI Core & WPI series. Initially, the number of observations was 139 for all the series. After seasonality filtering, four observations were lost in each series, leaving 135 filtered observations for the series. These 135 filtered observations were found to be stationary (result not reported due to brevity) and were used as an input to HP, BK & CF filters.

For Beveridge Nelson (BN) Decomposition, IIP series followed an ARIMA (3,1,5) process, WPI Core series followed an ARIMA (1,1,1) process and WPI series followed an ARIMA (1,1,0) process. The observations of the cyclical component obtained from the BN method for all the series were then subjected to the Beaulieu and Miron methodology [1993]. Seasonal unit root at π , +/- $2\pi/3$ & +/- $5\pi/6$ was found in the cyclical component of IIP series. Hence, the second & third difference was carried on these observations. Therefore, we were left with 130 seasonally filtered cyclical observations for IIP series using the BN method. No seasonal unit root was found in the cyclical component of WPI Core series & WPI Series, leaving us with 137 cyclical observations. In all the series, the cyclical observations after seasonal adjustment were found to be stationary.

3.1 Correlation between Cyclical Components of Prices & Output

3.1.1 Contemporaneous Correlation between Prices & Output

To understand the cyclical co-movement of prices with output with the help of various trend-cycle decomposition methods, Table 1.1 reports the contemporaneous correlation of WPI Core with the output. Table 1.2 reports the contemporaneous correlation of WPI with the output.

Table 1.1. Contemporaneous Correlation of WPI Core with IIP: April 2005-October 2016

HP	BK	CF	BN
(1)	(2)	(3)	(4)
-0.06	-0.61***	-0.54***	0.24***

Note: The figures show the contemporaneous correlation coefficients between the cyclical components of WPI Core and IIP. *denotes 10% significance, ***denotes 5% significance, *** denotes 1% significance.

Except for the WPI Core obtained under HP Filter, all the others obtained under BK filter, CF filter & BN method are significantly correlated with output at 1% level. The BK filer & CF filter show that WPI Core is countercyclical with respect to output, with a contemporaneous correlation coefficient of -0.61 & -0.54 respectively. However, the BN method shows that WPI Core is procyclical with respect to output with a contemporaneous correlation coefficient of 0.24. As already mentioned, the choice of ARIMA specification is sensitive for the output. The results reported was for one of the specifications for output (ARIMA (3,1,5)). Different specifications of ARIMA for output would help to substantiate this claim. The HP filter shows that WPI Core is a cyclical with respect to output with a contemporaneous correlation coefficient -0.06 and is insignificant at any conventional significance levels. Overall Table 1.1 seems to support the hypothesis of the countercyclical behavior of WPI Core with the output.

Table 1.2. Contemporaneous Correlation of WPI with IIP: April 2005-October 2016

HP	BK	CF	BN
(1)	(2)	(3)	(4)
0.05	-0.57***	-0.50***	0.27***

Note: The figures show the contemporaneous correlation coefficients between the cyclical components of WPI and IIP. *denotes 10% significance, ***denotes 5% significance, *** denotes 1% significance.

The results from Table 1.2 are similar to Table 1.1. The BK filer & CF filter show that WPI is countercyclical with respect to output, with a contemporaneous correlation coefficient of -0.57 & -0.50 respectively. However, the magnitude of the correlation coefficient under BK filter & CF filter is less for WPI as compared to WPI Core. BN method shows that WPI is procyclical with respect to output with a contemporaneous correlation coefficient of 0.24. Again, it must be noted that the results reported were for one of the specifications for output (ARIMA (3,1,5)). The HP filter shows that WPI is a cyclical with respect to output with a contemporaneous correlation coefficient 0.05 & is insignificant at any conventional significance levels. Table 1.2 also seem to support the hypothesis of the countercyclical behavior of WPI with the output.

Thus, from Table 1.1 & Table 1.2 we conclude that WPI Core & WPI (both as a proxy for prices) are countercyclical with respect to the output from April 2005 to October 2016. These results are consistent with Apergis [1996] and Agenor et. al., [2000] which report the countercyclical behavior of price level (both the studies use CPI as a proxy for the price) with respect to the output from mid1970's to mid1990's. These results also suggest that the countercyclical behavior of prices seems to be an inherent feature of the Indian economy and a stylised fact about the Indian economy. The BK filter & CF filter all show similar results (although the strength of the relationship varies in magnitude). HP filter shows that prices are a cyclical with respect to output. Recently, Hamilton [2017] criticises HP filter on basis of producing spurious dynamic relations that have no basis on the underlying datagenerating process. BN methods show the procyclical behavior of prices with respect to output. Since the results of the BN method vary with ARIMA model specification, relying completely on the BN method may mislead policymakers. Thus, different detrending techniques give different results. As a result, researchers can use multiple trend-cycle decomposition techniques for robustness check instead of relying on a single trend-cycle decomposition method.

3.1.2 Static Cross-Correlation between Prices & Output

We now analyze the relationship between cyclical components of price and output in the time domain using static cross-correlations. Cross-correlations are helpful in detecting the phase shift of prices relative to output. Table 1.3 shows cross-correlations between cyclical components of WPI Core & output from April 2005 to October 2016. Table 1.4 shows cross-correlations between cyclical components of WPI & output from April 2005 to October 2016. The cross-correlations are reported up to eight leads & lags, and the standard error is computed under the null hypothesis that the true correlation coefficient is zero. The results show that the standard errors for cross-correlations are very similar.

Table 1.3(A) shows cross-correlation between the cyclical component of output & WPI Core using HP filter. Although in HP filter, WPI Core is uncorrelated with output contemporaneously, the correlations between output and leads of WPI Core are all positive except at lead 1. In addition, WPI Core-output cross-correlation peaks at -0.17 (lag 2) which is significant at 10% level. Hence the WPI-Core tends to lag output by two months. Table 1.3(B) reports cross-correlation between cyclical component of output & WPI Core using BK filter. Majority of the cross-correlations are negative & higher in magnitude. The crosscorrelation peaks at lead one (-0.64) & two (-0.64) indicating WPI Core leads output by one to two months. Table 1.3(C) presents the crosscorrelation between the cyclical component of output & WPI Core using CF filter. The cross-correlation peaks at lead 1 (-0.56) indicating WPI Core lead output by one month. Table 1.3(D) shows the cross-correlation between cyclical components of output & WPI Core using the BN method. The cross-correlation peaks at zero (0.24) indicating the simultaneous movement (no lead/lag) of WPI Core with the output. As already mentioned, the choice of ARIMA specification is sensitive for the output. The results reported were for one of the specifications for output (ARIMA, (3,1,5)).

Overall, the implications from Table 1.3 gives us mixed results. HP filter claims that WPI Core lags output by two months while BK filter & CF filter show that WPI Core leads output by one month. BN methods exhibit simultaneous movement of WPI Core with the output.

Table 1.3. Static Cross-Correlation between Cyclical Components of WPI Core & IIP from April 2005 to October
2016 (Standard errors are in parenthesis)

1.3(A) HP filter		
Lead(-)/Lag(+)	Cross-Correlation	
-8	0.07 (0.09)	
-7	-0.05 (0.09)	
-6	-0.18 (0.09)	
-5	-0.30 (0.08)	
-4	-0.41 (0.08)	
-3	-0.49 (0.08)	
-2	-0.54 (0.07)	
-1	-0.56 (0.07)	
0	-0.54 (0.07)	
1	-0.49 (0.08)	
2	-0.41 (0.08)	
3	-0.31 (0.08)	
4	-0.19 (0.09)	
5	-0.07 (0.09)	
6	0.05 (0.09)	
7	0.16 (0.09)	
8	0.24 (0.08)	

1.3(B) BK filter

Lead(-)/Lag(+)	Cross-Correlation
-8	-0.03 (0.10)
-7	-0.17 (0.10)
-6	-0.30 (0.10)
-5	-0.43 (0.10)
-4	-0.53 (0.10)
-3	-0.60 (0.10)
-2	-0.64 (0.10)
-1	-0.64 (0.10)
0	-0.61 (0.10)
1	-0.54 (0.10)
2	-0.43 (0.10)
3	-0.29 (0.10)
4	-0.18 (0.10)
5	-0.06 (0.10)
6	0.07 (0.10)
7	0.17 (0.10)
8	0.25 (0.10)

1.3(D) BN filter

Lead(-)/Lag(+)	Cross-Correlation
-8	-0.23 (0.09)
-7	-0.13 (0.09)
-6	-0.16 (0.09)
-5	-0.11 (0.09)
-4	-0.04 (0.09)
-3	-0.05 (0.09)
-2	0.14 (0.09)
-1	0.07 (0.09)
0	0.24 (0.09)
1	0.23 (0.09)
2	0.10 (0.09)
3	-0.01 (0.09)
4	-0.15 (0.09)
5	-0.01 (0.09)
6	-0.14 (0.09)
7	-0.12 (0.09)
8	-0.07 (0.09)

Lead(-)/Lag(+)	Cross-Correlation
-8	0.02 (0.09)
-7	0.03 (0.09)
-6	0.11 (0.09)
-5	0.07 (0.09)
-4	0.03 (0.09)
-3	0.08 (0.09)
-2	0.03 (0.09)
-1	-0.11 (0.09)
0	-0.06 (0.09)
1	-0.14 (0.09)
2	-0.17 (0.09)

-0.01 (0.09)

 $0.01\ (0.09)$

0.02 (0.09)

 $0.10\ (0.09)$

0.11 (0.09)

0.09 (0.09)

3

4

5

6

7

8

1.3(C) CF filter

1.	4(A) HP filter
Lead(-)/Lag(+)	Cross-Correlation
-8	-0.10(0.09)
-7	-0.08(0.09)
-6	0.03(0.09)
-5	0.03(0.09)
-4	0.05(0.09)
-3	0.18(0.09)
-2	0.15(0.09)
-1	0.03(0.09)
0	0.05(0.09)
1	-0.12(0.09)
2	-0.24(0.08)
3	-0.11(0.09)
4	-0.11(0.09)
5	-0.06(0.09)
6	0.06(0.09)
7	0.07(0.09)
8	0.08(0.09)

 Table 1.4. Static Cross-Correlation between Cyclical Components of WPI & IIP from April 2005 to October 2016 (Standard errors are in parenthesis)

Lead(-)/Lag(+) Cross-Correlation 0.03(0.10) -8 -7 -0.10(0.10) -0.23(0.10) -6 -0.35(0.10) -5 -4 -0.45(0.09)-3 -0.53(0.09)-2 -0.58(0.08)-1 -0.59(0.08)0 -0.57(0.08)1 -0.52(0.09)2 -0.42(0.09)3 -0.29(0.10) 4 -0.17(0.10) 5 -0.04(0.10) 6 0.10(0.10)7 0.21(0.10)8 0.30(0.10)

1.4(B) BK filter

Lead(-)/Lag(+)	Cross-Correlation
-8	0.21(0.08)
-7	0.09(0.09)
-6	-0.04(0.09)
-5	-0.17(0.09)
-4	-0.29(0.08)
-3	-0.39(0.08)
-2	-0.46(0.08)
-1	-0.50(0.08)
0	-0.50(0.08)
1	-0.47(0.08)
2	-0.41(0.08)
3	-0.31(0.08)
4	-0.19(0.09)
5	-0.06(0.09)
6	0.07(0.09)
7	0.19(0.09)
8	0.29(0.08)

1.4(C) CF filter

1.4(D) BN filter		
Lead(-)/Lag(+)	Cross-Correlation	
-8	-0.37(0.08)	
-7	-0.14(0.09)	
-6	-0.12(0.09)	
-5	-0.06(0.09)	
-4	0.05(0.09)	
-3	-0.01(0.09)	
-2	0.29(0.08)	
-1	0.14(0.09)	
0	0.27(0.09)	
1	0.17(0.09)	
2	-0.07(0.09)	
3	-0.13(0.09)	
4	-0.33(0.08)	
5	-0.06(0.09)	
6	-0.12(0.09)	
7	-0.06(0.09)	
8	0.09(0.09)	

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Table 1.4(A) shows cross-correlation between the cyclical component of output & WPI using HP filter. In the HP filter, WPI and output are contemporaneously uncorrelated and the crosscorrelation peaks at -0.24 (lag 2) which is significant at 1% level. Hence the WPI tends to lag output by two months. Table 1.4(B) reports cross-correlation between cyclical component of output & WPI using BK filter. The correlations between output and lead of WPI are all negative except at lead 8. The cross-correlation peaks at lead one (-0.59) indicating WPI leads output by one month. Table 1.4(C) presents the crosscorrelation between the cyclical component of output & WPI using CF filter. The cross-correlation peaks at zero (-0.50) as well as lead 1 (-0.50) indicating simultaneous to one month lead of WPI with respect to output. Table 1.4(D) shows the cross-correlation between cyclical components of output & WPI using the BN method. The cross-correlation peaks at lead 2 (0.29) indicating WPI lead output by two months.

From Table 1.4 we again obtain mixed results. The results are similar to Table 1.3 except for the BN method. Here also, HP filter shows that WPI lag output by two months while BK filter and CF filter show that WPI lead output by one month. BN methods exhibit that WPI lead output by two months. As mentioned earlier about the caveats relating to HP filter and BN method, we conclude from the results of Table 1.3 and Table 1.4 that prices (both WPI Core & WPI) lead output by one month using BK & CF filter.

3.1.3 Comparison of different Detrending Methods of the Cyclical Component of Price & Output

To identify similarities between cyclical components obtained from various trend-cycle decomposition technique, correlation measures have been obtained and are shown in Table 1.5 & Table 1.6 respectively. In Table 1.5 the upper

triangle represents the correlation between the cyclical components of output, while the lower triangle represents the correlation between the cyclical components of WPI Core.

Table 1.5. (Correlation between Cyclical Components of WPI Core & IIP)

Prices/Output	HP	BK	CF	BN
(1)	(2)	(3)	(4)	(5)
HP	1.00	-0.26	0.03	-0.24
BK	0.71	1.00	0.81	0.17
CF	0.69	0.95	1.00	0.01
BN	-0.81	-0.60	-0.59	1.00

Note: The upper triangle represents the correlation between cyclical components of output (red) & lower triangle represents the correlation between cyclical components of WPI Core (purple).

The magnitude of correlation for cyclical components of WPI Core is high in all four methodologies as compared with cyclical components of output (except for correlation measure between BK filter & CF filter which is 0.81). In general, correlation between cyclical components BK filter & CF filter is very high for output (0.81) & WPI Core (0.95). This is expected since both are bandpass filters. In cyclical components of WPI Core, the BN method has a moderate negative correlation with the remaining three methodologies. In cyclical components of output, the correlation is insignificant between CF filter & HP filter (0.03) as well as CF filter & BN method (0.01).

 Table 1.6. (Correlation between Cyclical Components of WPI & IIP)

Prices/Output	HP	BK	CF	BN
(1)	(2)	(3)	(4)	(5)
HP	1.00	-0.26	0.03	-0.24
BK	0.63	1.00	0.81	0.17
CF	0.64	0.96	1.00	0.01
BN	-0.76	-0.49	-0.50	1.00

Note: The upper triangle represents the correlation between cyclical components of output (red) & lower triangle represents the correlation between cyclical components of WPI (purple).

The results of Table 1.6 are similar to Table 1.5. In Table 1.6, the upper triangle represents the correlation between the cyclical components of output, while the lower triangle represents the correlation between the cyclical components of WPI. Here also, in the cyclical components of WPI, the BN method has a moderate negative correlation with the remaining three methodologies but lower in magnitude as compared to cyclical components of WPI Core (see Table 1.5). Similarly, the correlation between HP filter and other detrending methods (BK filter, CF filter & BN method) is lower in magnitude for the cyclical components of WPI as compared to cyclical components of WPI Core (see Table 1.5).

Thus, Table 1.5 & Table 1.6 provide us with a similar picture about the correlation measure between cyclical components obtained from various detrending methods used irrespective of using WPI Core or WPI as a proxy for prices.

3.2 Correlation between Cyclical Components of Inflation & Output

3.2.1 Contemporaneous Correlation between Inflation and Output

To understand the cyclical comovement of inflation with output with the help of various trend-cycle decomposition methods, Table 2.1 reports the contemporaneous correlation of inflation with the output. Inflation is obtained by taking the first difference of log (WPI). The Beaulieu and Miron methodology (1993) is used to seasonally adjusted the inflation series and make it stationary. However, no seasonal unit root was found in this case & the series was stationary.

The results of Table 2.1 are similar to Table 1.1 & 1.2 except for the ones from the BN method. Inflation obtained under BK filter, CF filter & BN

method are significantly correlated with output at 1% level excluding inflation obtained under the HP filter. The BK filer & CF filter show that inflation is countercyclical with respect to output, with a contemporaneous correlation coefficient of -0.47 & -0.44 respectively. The magnitude of the correlation coefficient obtained under inflation for both BK & CF filter is lower in magnitude as compared to prices (both WPI Core & WPI). BN method also shows that inflation is countercyclical with respect to output with a contemporaneous correlation coefficient of -0.28. The results reported was for one of the specifications for output (ARIMA (3,1,5)). Different specifications of ARIMA for output would help to substantiate this claim. The HP filter shows that inflation is acyclical with respect to output with a contemporaneous correlation coefficient 0.05 & is insignificant at any conventional significance levels. Overall, Table 2.1 seems to support the hypothesis of the countercyclical behavior of inflation with the output.

Table 2.1. Contemporaneous Correlation between Inflation and IIP: April 2005-October 2016

HP	BK	CF	BN
(1)	(2)	(3)	(4)
0.05	-0.47***	-0.44***	-0.28***

Note: The figures show the contemporaneous correlation coefficients between the cyclical components of inflation and IIP. * denotes 10% significance, *** denotes 5% significance, ***

From results in Table 2.1, we can conclude that inflation is countercyclical with respect to the output from April 2005 to October 2016. These results are consistent with Apergis, [1996] who also reported the countercyclical behavior of inflation (Apergis, [1996] uses the first difference of log (CPI) as the proxy for inflation) with respect to the output from 1975 to 1993). However, the results are not consistent with Agenor, et. al., [2000] who report procyclical behavior of inflation (Agenor, et. al., [2000] uses four-quarter change in CPI as a proxy for inflation) in case of India from 1978 to 1995. Ironically, both the studies use HP filter. In this study, HP filter shows that inflation is acyclical with respect to output. Criticism of HP filter has been mentioned earlier as well. To further substantiate the claim of countercyclical behavior of inflation being an inherent feature of the Indian economy, a much larger sample would be required along with using different univariate or multivariate trend-cvcle decomposition techniques as a robustness check. The BK filter & CF filter all show similar results (although the strength of the relationship varies in magnitude). BN methods show the countercyclical behavior of inflation with respect to output. And the results of the BN method vary with ARIMA model specification. As stated earlier, researchers instead of relying on a single trend-cycle decomposition method can use various univariate or multivariate trend-cycle decomposition technique for robustness check.

3.2.2 Static Cross-Correlation between Inflation & Output

We analyze the relationship between cyclical components of inflation and output in the time domain using static cross-correlations. Table 2.2 shows cross-correlations between cyclical components of inflation and output from April 2005 to October 2016. The cross-correlations are reported up to eight leads & lags, and the standard error is computed under the null hypothesis that the true correlation coefficient is zero. The results show that the standard errors for cross-correlations are very similar.

Table 2.2(A) shows cross-correlation between the cyclical component of output & inflation using HP filter. Although in HP filter, inflation is uncorrelated with output contemporaneously, inflation-output cross-correlation peaks at 0.31 (lead 3) which is significant at 1% level. Hence, inflation leads output by three months. Table 2.2(B) reports cross-correlation between cyclical component of output & inflation using BK filter. All the leads in the cross-correlations are negative & higher in magnitude. The cross-correlation peaks at lead two (-0.57) & three (-0.57) indicating inflation leads output by two to three months. Table 2.2(C) presents the cross-correlation between cyclical component of output & inflation using CF filter. The crosscorrelation peaks at lead 2 (-0.51) indicating inflation lead output by two months. Table 2.2(D) shows the cross-correlation between cyclical components of output & inflation using the BN method. The cross-correlation peaks at lead eight (0.38) indicating that inflation leads output by eight months. The results of the BN method vary with ARIMA model specification. The results reported was for one of the specifications for output (ARIMA (3,1,5)).

Overall, the implications from Table 2.2 gives us similar results for HP, BK & CF filter. All the three filters show that inflation leads output by two to three months. BN methods show that inflation leads output by eight months.

Table 2.2. Static Cross-Correlation between Cyclical Components of Inflation & IIP from April 2005 to October
2016 (Standard errors are in parenthesis)

2.2(A) HP filter		
Lead(-)/Lag(+)	Cross-Correlation	
-8	-0.04(0.09)	
-7	-0.04(0.09)	
-6	0.12(0.09)	
-5	0.07(0.09)	
-4	-0.01(0.09)	
-3	0.31(0.08)	
-2	0.06(0.09)	
-1	-0.29(0.08)	
0	0.05(0.09)	
1	-0.17(0.09)	
2	-0.25(0.08)	
3	0.09(0.09)	
4	0.03(0.09)	
5	-0.03(0.09)	
6	0.11(0.09)	
7	0.11(0.09)	
8	0.05(0.09)	
0 1 2 3 4 5 6 7 8	$\begin{array}{c} 0.05(0.09) \\ -0.17(0.09) \\ -0.25(0.08) \\ 0.09(0.09) \\ 0.03(0.09) \\ -0.03(0.09) \\ 0.11(0.09) \\ 0.11(0.09) \\ 0.05(0.09) \end{array}$	

2.2(B) BK filter

Lead(-)/Lag(+)	Cross-Correlation
-8	-0.16(0.10)
-7	-0.28(0.10)
-6	-0.39(0.09)
-5	-0.48(0.09)
-4	-0.55(0.09)
-3	-0.57(0.08)
-2	-0.57(0.08)
-1	-0.54(0.09)
0	-0.47(0.09)
1	-0.37(0.09)
2	-0.23(0.10)
3	-0.08(0.10)
4	0.05(0.10)
5	0.16(0.10)
6	0.27(0.10)
7	0.35(0.10)
8	0.40(0.09)

2.2(C) CF filter

Lead(-)/Lag(+)	Cross-Correlation
-8	0.03(0.09)
-7	-0.10(0.09)
-6	-0.23(0.08)
-5	-0.35(0.08)
-4	-0.43(0.08)
-3	-0.49(0.08)
-2	-0.51(0.07)
-1	-0.49(0.08)
0	-0.44(0.08)
1	-0.36(0.08)
2	-0.25(0.08)
3	-0.13(0.09)
4	0.00(0.09)
5	0.13(0.09)
6	0.24(0.08)
7	0.33(0.08)
8	0.39(0.08)

2.2(D) BN filter

Lead(-)/Lag(+)	Cross-Correlation
-8	0.38(0.08)
-7	0.15(0.09)
-6	0.12(0.09)
-5	0.07(0.09)
-4	-0.05(0.09)
-3	0.01(0.09)
-2	-0.30(0.08)
-1	-0.15(0.09)
0	-0.28(0.08)
1	-0.17(0.09)
2	0.08(0.09)
3	0.13(0.09)
4	0.34(0.08)
5	0.06(0.09)
6	0.12(0.09)
7	0.06(0.09)
8	-0.09(0.09)

3.2.3 Comparison of different Detrending Methods of the Cyclical Component of Inflation & Output.

To identify similarities between cyclical components obtained from various trend-cycle decomposition technique, correlation measures are shown in Table 2.3. In Table 2.3 the upper triangle represents the correlation between the cyclical components of output, while the lower triangle represents the correlation between cyclical components of inflation.

Table 2.3 (Correlation between Cyclical Components of Inflation & IIP)

Prices/Output	HP	BK	CF	BN
(1)	(2)	(3)	(4)	(5)
HP	1.00	-0.26	0.03	-0.24
BK	0.46	1.00	0.81	0.17
CF	0.47	0.96	1.00	0.01
BN	0.28	0.41	0.42	1.00

Note: The upper triangle represents the correlation between cyclical components of output (red) & lower triangle represents the correlation between cyclical components of inflation.

The magnitude of correlation for the cyclical components of inflation is high among all four methodologies as compared with cyclical components of output (except for correlation measure between BK filter & CF filter which is 0.81). As compared to prices for both WPI Core (see Table 1.5) and WPI (see Table 1.6), the magnitude of the correlation for cyclical components of inflation is lower. In general, the correlation between cyclical components BK filter & CF filter is very high for output (0.81) & inflation (0.96) as expected since both are bandpass filters. In cyclical components of inflation, the BN method has a moderate positive correlation with the remaining three methodologies. In the case of prices for both WPI Core (see Table 1.5) & WPI (see Table 1.6), BN method has a moderate negative correlation with the remaining three methodologies.

3.3 Testing Granger Causality in the frequency domain for Price & Output and Inflation & Output

All the seasonally adjusted series have been filtered using ARMA models to obtain innovative series. The GC in the frequency domain is conducted between output & prices as well as output & inflation using the innovative series which are the residuals of the above process. After ARMA filtering, we are left with 128 observations. We have used the lag length $M = 2\sqrt{T}$ [Chatfield, 2016], where T is the number of observations. The frequencies (λ) on the horizontal axis can be converted into a cycle or periodicity of T months by $T = 2\pi/\lambda$ where T is the period. Thus, with 128 observations, we can consider 64 cycles of different frequencies. The shortest cycle is of two months (frequency = 3.14) & the longest cycle is of 128 months (frequency = 0.05). All the figures report the test statistics, along with their critical values at 5% significance level (a line parallel to the x-axis) for all frequencies λ in the interval (0, π). To interpret the results of the GC in frequency domain the frequencies in the interval $(0, \pi)$ are grouped into three frequency bands, that is; short-run (range $\lambda \epsilon$ (2,3.14)), medium-run (range $\lambda \epsilon$ (0.5,2)), and long-run (range $\lambda \epsilon$ (0,0.5)). These three frequency bands correspond to the cycles of duration 2 to 3 months, 3 months to 12 months, and 12 months & beyond, respectively.

3.3.1 Causality between WPI Core & IIP

Figures 1 and 2 show the coefficients of Granger coherence between IIP & WPI Core series at all frequencies. Figure 1 shows the result of Granger coefficient of coherence for causality running from IIP to WPI Core series at 5% level of significance. It is insignificant at all frequencies. As a result, there is an absence of causality and empirical results do not support evidence of causality from output to WPI Core.





Note: The line parallel to frequency axis critical values at 5% level of significance

Figure 2 shows the result of Granger from WPI Core to IIP series at 5% level of coefficient of coherence for causality running significance.



Figure 2. Reverse Granger Causality from WPI Core to IIP at 5%

Note: The line parallel to the frequency axis represents critical values at 5% level of significance

WPI Core Granger causes IIP in the range $\lambda \epsilon$ 3.3.2 Causality between WPI & IIP $(0, 0.09), \lambda \in (0.17, 0.92)$ and $\lambda \in (1.04, 1.28)$ corresponding to 70 months, 7 to 37 months & 5 to 6 months, respectively. The magnitude of causality varies over various frequencies from medium run to the long run. It is high in the long run as compared to intermediate run. The Granger coefficient of coherence is maximum at 0.77 at frequency 0.28 which corresponds to 22 months. This implies that maximum causal flow from WPI Core to IIP is 77% in the long run. Thus, WPI Core affects output more in the long run as compared to intermediate run. The causality is insignificant for frequencies in the range (2, 3.14), which suggests that the link between WPI Core & IIP is insignificant in the short run.

Figures 3 and 4 show the coefficients of Granger coherence between IIP & WPI series at all frequencies. Figure 3 shows the results of Granger coefficient of coherence for causality running from IIP to WPI series at 5% level of significance. IIP Granger causes WPI in the range $\lambda \epsilon$ (0, 1.28) corresponding 5 months & beyond. The magnitude of causality varies over various frequencies being high in the intermediate run as compared to the long run. The Granger coefficient of coherence is maximum at 0.80 at frequency 0.84 which corresponds to 7 months. Thus, output has a higher predictive power regarding WPI in the medium run as compared to the long run.

Figure 3. Granger Causality from IIP to WPI at 5%



Note: The line parallel to frequency axis represents critical values at 5% level of significance

Figure 4 shows the results of Granger coefficient of coherence for causality running from WPI to IIP series at 5% level of significance. WPI Granger causes IIP in the range $\lambda \in (0.23, 1.3)$ corresponding to 5 to 27 months. WPI affect WPI & IIP is insignificant in the short run.

output more in the intermediate run as compared to the long run. In Figure 3 & Figure 4, the causality is insignificant for frequencies in the range (2, 3.14), which suggests that the link between



Figure 4. Reverse Granger Causality from WPI to IIP at 5%

Note: The line parallel to frequency axis represents critical values at 5% level of significance

To sum up the GC in the frequency domain between output and prices (both WPI Core and WPI), there is evidence of unidirectional causality between IIP and WPI Core while bidirectional causality between IIP & WPI. In the case of WPI Core and IIP, the causality running from WPI Core to IIP was found to be significant in the medium run to the long run but was found to be insignificant in the short run. WPI Core influences IIP more in the long run as compared to medium run. Also, there is an absence of causality from IIP to WPI Core. In the case of WPI and IIP, the causality running from IIP to WPI as well as the reverse causality is significant in the medium to long run while insignificant in the short run. This suggests that output is sensitive to WPI more in the medium run as compared to the long run. However, output and WPI have no influence on each other in the short run. The Granger coefficient of coherence is of higher magnitude in the causal relation from IIP to WPI (0.80) as well as the reverse causal relationship (0.70) in the medium run. This implies the strong influence of IIP & WPI on each other in the medium run.

3.3.3 Causality between Inflation & IIP

Figures 5 and 6 show the coefficient of Granger coherence between IIP & inflation series at all frequencies. Figure 5 shows the result of Granger coefficient of coherence for causality running from IIP to inflation series at 5% level of significance. IIP Granger causes inflation in the range $\lambda \epsilon$ (0, 1.28) corresponding to 5 months & beyond. The magnitude of causality varies over various frequencies being high in the intermediate run (0.76 at frequency 0.84 which corresponds to 7 months) as compared to the long run (beyond 12 months). Thus, output affects inflation more in the intermediate run as compared to the long run.

Figure 5. Granger Causality from IIP to Inflation at 5%



Note: The line parallel to frequency axis represents critical values at 5% level of significance

Figure 6 shows the result of Granger from Inflation to IIP series at 5% level of coefficient of coherence for causality running significance.





Note: The line parallel to frequency axis represents critical values at 5% level of significance
Inflation Granger causes IIP in the range $\lambda \epsilon$ (0.21, 1.3) corresponding to 5 to 30 months. The magnitude of causality varies over various frequencies being high in the intermediate run as compared to the long run. Thus, inflation affects output more in the intermediate run as compared to the long run. In Figure 5 and Figure 6, the causality is insignificant for frequencies in the range (2, 3.14), which suggests that the link between inflation and IIP is insignificant in the short run.

From the analysis of GC in the frequency domain between output & inflation, there is evidence of bidirectional causality between IIP & Inflation. The results are similar to bidirectional causality between IIP and WPI (Figure 3 and Figure 4). The causality running from IIP to Inflation as well as the reverse causality is significant in the medium to long run while insignificant in the short run. This suggests that output and inflation influence each other more in the medium run as compared to the long run. Thus, the output is sensitive to inflation more in the medium run as compared to the long run. However, the sensitivity of output with respect to inflation is absent in the short run.

4. CONCLUSION & POLICY IMPLICATIONS

This paper tries to investigate the cyclical behavior of prices (WPI Core & WPI) and inflation with respect to output for the period April 2005 to October 2016. Using various univariate decomposition techniques, we find that the contemporaneous correlation coefficient between the cyclical components of prices & inflation is negative relative to output. Thus, prices (WPI Core and WPI) & inflation are countercyclical with respect to output. The countercyclical behavior of prices is consistent with the prediction of the supply determined models of the business cycles. These results are in line with those of earlier studies by Apergis [1996] and Agenor et. al., [2000] who also find the countercyclical behavior of prices with output

for the time period between mid1970's to mid1990's. Thus, countercyclical behavior of prices seems to be an inherent feature of the Indian economy. However, this cannot be said in the case of inflation. The results are consistent with Apergis [1996] who also reported the countercyclical behavior of inflation but not consistent with Agenor et. al., [2000] who reported procyclical behavior of inflation output for the time period between mid1970's to mid1990's. A larger sample of data along with using various univariate & multivariate trend-cycle decomposition techniques as a robustness check can be used to substantiate the claim of countercyclical behavior of inflation with respect to output. Further, decomposing causality into various time horizons, we find unidirectional causality running from WPI Core to output in medium run (3 months to 12 months) to long run (beyond 12 months). We also obtain bidirectional causality between WPI & IIP as well as inflation & IIP in the medium run to the long run. However, when we consider the correlations at various leads and lags in order to detect a phase shift of prices and inflation with respect to output we obtain a one month lead of prices (WPI Core and WPI) with output, for BK and CF filters. Inflation leads output by two months using BK and CF filters. Thus, WPI Core, WPI and inflation can act as leading indicators of IIP. Further research is needed to corroborate these findings. For instance, various other univariate & multivariate techniques such as unobserved components [see Canova, 1998], Bivariate unobserved components model [see Gonzales-Astudillo and Roberts, 2016], Butterworth filter [see Grochová and Rozmahel, 2015], etc., can be used to decompose prices, inflation, and output. Based on the above findings one can also test various business cycle models on the assumptions of prices and inflation being countercyclical.

Countercyclical behavior of prices show the dominance of supply shocks in the economy. If aggregate demand was the driving force in the Indian economy, then prices should have been procyclical. The policy makers should pay attention to specific sectors and sub-sectors to sort out structural issues rather than focusing on demand side issues.

NOTES

1. The new CPI series (Urban, Rural & Combined) could not be used as proxy for prices since it is available from 2011 onwards. The period of analysis in this study is from April 2005 to October 2016.

2. In Granger-Sims causality test, popularised by Sims [1972], the joint behavior of time series is described as a variable X will Granger-cause the variable Y if the set of correlations between current innovations in Y and lagged innovations in X is significant.

3. The frequencies $\lambda_1,\,\lambda_2,\,....,\,\lambda_N\,$ are specified as follows:

 $\lambda_1 = 2\pi/T$ $\lambda_2 = 4\pi/T$

The highest frequency considered is $\lambda_N = 2N\pi/T$ where $N \equiv T/2$, if *T* is an even number and $N \equiv (T-1)/2$, if *T* is an odd number [see Hamilton, 1994, p. 159].

4. For the endpoints $\lambda = 0$ and $\lambda = \pi$ one only has one degree of freedom since the imaginary part of the spectral density estimates cancels out.

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Appendix I

In our study, we follow the bivariate GC test over the spectrum proposed by Lemmens, et. al., [2008]. They have reconsidered the original framework proposed by Pierce [1979] and proposed a testing procedure for Pierce's spectral GC measure.

Let X_i and Y_i be two stationary time series of length T. The goal is to test whether X_i Granger causes Y_i at a given frequency λ . Pierce's measure for GC [Pierce, 1979] in the frequency domain is performed on the univariate innovations series, U_i and V_i , derived from filtering the X_i and Y_i as univariate ARMA processes, i.e.,

$$\Theta^{x}(L)X_{t} = C^{x} + \Phi^{x}(L)U_{t} \qquad \dots (1)$$

$$\Theta^{\mathsf{y}}(L)Y_t = C^{\mathsf{y}} + \Phi^{\mathsf{y}}(L)V_t \qquad \dots (2)$$

where $\Theta^{x}(L)$ and $\Theta^{y}(L)$ are autoregressive polynomials, $\Phi^{x}(L)$ and $\Phi^{y}(L)$ are moving average polynomials and $C^{x} \& C^{y}$ potential deterministic components. The

obtained innovation series U_i and V_r , which are white-noise processes with zero mean, possibly correlated with each other at different leads and lags. The innovation series U_i and V_r , are the series of importance in the GC test proposed by Lemmens, et. al., [2008].²

Let $S_u(\lambda)$ and $S_v(\lambda)$ be the spectral density functions, or spectra, of U_t and V_t , at frequency, $\lambda \in [0, \pi]$, defined by

$$S_u(\lambda) = \frac{1}{2\pi} \sum_{k=-\infty}^{\infty} \gamma_u(k) e^{-i\lambda k} \qquad \dots (3)$$

$$S_{\nu}(\lambda) = \frac{1}{2\pi} \sum_{k=-\infty}^{\infty} \gamma_{\nu}(k) e^{-i\lambda k} \qquad \dots (4)$$

where $\gamma_u(k) = \text{Cov}(u_t, u_{t-k})$ and $\gamma_v(k) = \text{Cov}(v_t, v_{t-k})$ represent the autocovariances of u_t and v_t at lag k. The idea of the spectral representation is that each time series may be decomposed into a sum of uncorrelated components, each related to a particular frequency λ .³ The spectrum can be interpreted as a decomposition of the series variance by frequency. The portion of the variance of the series occurring between any two frequencies is given by the area under the spectrum between those two frequencies. In other words, the area under $S_u(\lambda)$ and $S_v(\lambda)$, between any two frequencies λ and $\lambda + d\lambda$, gives the portion of the variance of u_i and v_i , respectively, due to cyclical components in the frequency band $(\lambda, \lambda + d\lambda)$.

The cross spectrum represents the cross covariogram of two series in the frequency domain. It allows determining the relationship between two time series as a function of frequency. Let $S_{uv}(\lambda)$ be the crossspectrum between u_i and v_i series. A cross spectrum is a complex number, defined as,

Is a complex number, defined as,

$$S_{uv}(\lambda) = C_{uv}(\lambda) + iQ_{uv}(\lambda)$$

$$= \frac{1}{2\pi} \sum_{k=-\infty}^{\infty} \gamma_{uv}(k) e^{-i\lambda k} \qquad \dots (5)$$

where $C_{uv}(\lambda)$ is called cospectrum and $Q_{uv}(\lambda)$ is called quadrature spectrum are respectively, the real and imaginary parts of the cross-spectrum and $i = \sqrt{-1}$ Here $\gamma_{uv}(k) = \text{Cov}(u_t, v_{t-k})$ represents the crosscovariance of u_t and v_t at lag k. The cospectrum $Q_{uv}(\lambda)$ between two series u_t and v_t at frequency λ can be interpreted as the covariance between two series u_t and v_t that is attributable to cycles with frequency λ . The quadrature spectrum looks for evidence of out-of-phase cycles (see Hamilton, p.274, 1994). The crossspectrum can be estimated non-parametrically by,

$$\hat{S}_{uv}(\lambda) = \frac{1}{2\pi} \left\{ \sum_{k=-M}^{M} W_k \hat{\gamma}_{uv}(k) e^{-i\lambda k} \right\} \qquad \dots (6)$$

with $\hat{\gamma}_{uv}(k) = C\hat{O}V(u_i, v_{i-k})$ the empirical crosscovariances, and with window weights W_k , for k = -M, ..., M Eq. (6) is called the *weighted covariance estimator*, and the weights W_k are selected as the Bartlett weighting scheme that is 1 - |k|/M. The constant M determines the maximum lag order considered. The spectra of Eq. (3) and (4) are estimated in a similar way. This cross-spectrum allows us to compute the coefficient of coherence h_{uv} (λ) defined as,

$$h_{uv}(\lambda) = \frac{|S_{uv}(\lambda)|}{\sqrt{S_u(\lambda)S_v(\lambda)}} \qquad \dots (7)$$

Coherence can be interpreted as the absolute value of a frequency specific correlation coefficient. The squared coefficient of coherence has an interpretation similar to the R-squared in a regression context. Coherence thus takes values between 0 & 1. Lemmens et. al., [2008] have shown that, under the null hypothesis that h_{uv} (λ) = 0, the estimated squared coefficient of coherence at frequency λ , with 0 < λ < π when appropriately rescaled, converges to a chi-squared distribution with 2 degrees of freedom,⁴ denoted by χ^2_2 .

$$2(n-1)\hat{h}_{uv}^{2}(\lambda) \xrightarrow{a} \chi_{2}^{2} \qquad \dots (8)$$

where $->^d$ stands for convergence in distribution, with $n = T/(\sum_{k=-M}^{M} W_k^2)$. The null hypothesis h_{uv} (λ) = 0 versus h_{uv} (λ) > 0 is then rejected if

$$\hat{h}_{uv}(\lambda) > \sqrt{\frac{\chi^2_{2,1-\alpha}}{2(n-1)}} \qquad \dots (9)$$

With $\chi^2_{2,1-\alpha}$ being the 1- α quantile of the chi-squared distribution with 2 degrees of freedom.

The coefficient of coherence in Eq. (7) gives a measure of the strength of the linear association between two-time series, frequency by frequency, but does not provide any information on the direction of the relationship between two processes. Lemmens et. al., [2008] have decomposed the cross-spectrum (Eq. 5) into three parts: (i) $S_{u \leftrightarrow v}$, the instantaneous relationship between u_t and v_t ; (ii) $S_{u \rightarrow v}$, the directional relationship between v_t and lagged values of u_t and lagged values of v_t , i.e.,

$$S_{uv}(\lambda) = [S_{u \Leftrightarrow v} + S_{u \Rightarrow v} + S_{v \Rightarrow u}]$$

= $\frac{1}{2\pi} [\gamma_{uv}(0) + \sum_{k=-\infty}^{-1} \gamma_{uv}(k)e^{-i\lambda k}$
+ $\sum_{k=1}^{\infty} \gamma_{uv}(k)e^{-i\lambda k}]$...(10)

The proposed spectral measure of GC is based on the key property that u_t does not Granger cause v_t if and only if $\gamma_{uv}(k) = 0$ for all k < 0. The goal is to test the predictive content of u_t relative v_t to which is given by the second part of Eq. (10), i.e.,

$$S_{u \Rightarrow v}(\lambda) = \frac{1}{2\pi} \left[\sum_{k = -\infty}^{-1} \gamma_{uv}(k) e^{-i\lambda k} \right] \qquad \dots (11)$$

The Granger coefficient of coherence is then given by,

$$h_{u \Rightarrow v}(\lambda) = \frac{|S_{u \Rightarrow v}(\lambda)|}{\sqrt{S_u(\lambda)S_v(\lambda)}} \qquad \dots (12)$$

Therefore, in the absence of GC, $h_{u \Rightarrow v}(\lambda) = 0$ for every λ in [0, π]. The Granger coefficient of coherence takes values between zero and one, Pierce [1979]. Granger coefficient of coherence at frequency λ is estimated by

$$\hat{h}_{u \Rightarrow v}(\lambda) = \frac{|\hat{S}_{u \Rightarrow v}(\lambda)|}{\sqrt{\hat{S}_{u}(\lambda)\hat{S}_{v}(\lambda)}} \qquad \dots (13)$$

With $\hat{S}_{u \Rightarrow v}(\lambda)$ as in Eq. (6), but with all weights $W_k = 0$ for $k \ge 0$. The distribution of the estimator of the Granger coefficient of coherence is derived from the

distribution of the coefficient of coherence Eq. (8). Under the null hypothesis $\hat{h}_{u \rightarrow v}(\lambda) = 0$, the distribution of the squared estimated Granger coefficient of coherence at frequency λ , with $0 < \lambda < \pi$ is given by,

$$2(n'-1)\hat{h}_{uv}^2(\lambda) \xrightarrow{a} \chi_2^2 \qquad \dots (14)$$

where *n* is now replaced by $n' = T/(\sum_{k=-M}^{-1} W_k^2)$. Since the W_k s', with a positive index *k*, are set equal to zero when computing $\hat{S}_{u \to v}(\lambda)$, in effect only the W_k with negative indices are taken into account. The null hypothesis $\hat{h}_{u \to v}(\lambda) = 0$ versus $\hat{h}_{u \to v}(\lambda) > 0$ is then rejected if

$$\hat{h}_{u \Rightarrow v}(\lambda) > \sqrt{\frac{\chi^2_{2,1-\alpha}}{2(n'-1)}} \qquad \dots (15)$$

Afterward, we compute the Granger coefficient of coherence given by Eq. (13) and test the significance of causality by making use of Eq. (15).

FINANCING FOR A SUSTAINABLE FUTURE: ANALYSING THE ROLE OF MULTILATERAL DEVELOPMENT BANKS IN AN EVOLUTIONARY ENVIRONMENTAL LAW REGIME*

Seetha Sriraman

This paper attempts to outline the role of MDBs (Multi-lateral Development Banks) in supporting developmental funding activities within an evolutionary environmental law regime. Since the World Bank is seen to have a sustained presence in climate-related finance, its role has been analysed through its principal of funding, climate funds. In this context, our objective in the study was to address three main issues: first, MDBs role in integrating environmental considerations into multilateral funding activities with particular reference to the World Bank's functions; second, the treatment of environment protection standards under MDBs' development lending process and under climate-related funds; and third, examining the scope of independent complaints mechanisms with the help of some brief case studies (two of them of). In other words, the objective of the analysis was to draw insights from the experience of MDBs, more specifically, the World Bank, to serve as useful lessons for the climate finance regime in future.

Key Phrases: Multi-lateral Development Banks, environmental law regime, climate related finance, environment protection standards, independent complaints mechanism.

SECTION I

Introduction

In the past MDBs (Multi-lateral Development Banks)ⁱ have come under heavy criticism for their lending to development projects that have led to adverse environmental consequences in the developing world. Owing to public and governmental pressures over the disastrous environmental impacts, dramatic initiatives were attempted to be put in place to ensure environmental soundness of development projects [Head, 1991]. In other words, MDBs realigned their approach towards developmental activities by integrating environmental considerations into lending by formulating internal policies and safeguards to promote environmentally responsible practices [United Nations, 1987]. Yet, they have been seen to support fossil fuel projects in developing countries which carry e potential to emit huge amounts of GHG emissions.ⁱⁱ Although some of these projects utilise clean technology methods, many

others continue to suffer from poor implementation.ⁱⁱⁱ Given these instances, discussions continue to centre on the level and nature of responsibilities that are applicable to MDBs. As civil society participants increasingly push for effective monitoring and compliance of environment protection standards, it has become important to examine to how MDBs treat the implementation of democratic processes of access to information, transparency and complaints mechanisms.

It may be recalled that Principle 4 of the Rio Declaration provides that 'environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it [UNCED, 1992]. Further, the need to need to reconcile economic development with protection of the environment has been recognised by the International Court of Justice in the *Gabcikovo - Nagymaros case* [ICJ, 1997, Birnie, et. al., 2009]. MDBs have indeed sought to integrate environmental assessments into their lending practices. For instance, within the World

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^{*} A slightly revised and updated version of my unpublished LLM thesis, Queen Mary University, London. See Seetha [2014].

Bank's operational mandate, environmental considerations are reflected in its internal policies termed as 'Operational Policies' and 'Bank Procedures'.^{iv} Regional development banks have followed their own set of 'sustainability policies' or 'environment and social policy safeguards'. These frameworks typically provide for project screening, environmental assessment, disclosure and public consultation so as to assess the overall feasibility of the project implementation and constitute the minimum requirements that multilateral banks must meet. However, their application and implementation have been seen to have remained largely impervious to legal scrutiny. For instance, the possibility of MDBs being subjected to the application of 'lender liability' rules for the adverse or illegal environmental consequences of their loans has been examined [Sands and Peel. 2012] carefully and it was emphatically stated that MDBs are under an obligation to comply with general principles of international law relating to the protection of the environment, and any failure to comply with such obligations might entail their international responsibility, as well as liability for damages. More recently, the MDBs' goals have moved towards proactive approaches, in particular, through their involvement in funding climate-related projects. It has become necessary to understand how MDBs interpret and thereby apply their standards through the integration of environmental considerations while supporting climate-related funding activities. With MDBs seen to play a major role in mobilising financial and technical assistance to address climate change mitigation and adaptation, they have the potential to reduce GHG emissions and to create and preserve carbon sinks, since they finance development projects throughout the world [Dannenmaier, 2011]. The past two decades have seen the emergence of several sources of climate finance under the wide network of multilateral environmental agreements (MEAs). More, pertinently, the Green Climate Fund (GCF) was formally established during the 2010 United

Nations Framework for Climate Change Conference (UNFCC) in Cancun as a fund within its framework, under which the developed countries pledged to mobilise US\$100 billion annually by the year 2020 [UNFCC, 2011]. Although this was seen as an important step in the direction of a new funding mechanism, the majority of climaterelated financial flows were still expected to come from institutions outside the control of the UNFCCC [Moncel and Asselt, 2012].

Another mechanism which operates under the UNFCCC is the GEF (Global Environment Facility) which was initially constituted as a sole 'operating entity' with a focus on developing and transitional economy countries to further global environmental goals, including climate change and biodiversity. Although the fund is jointly implemented by the World Bank, the United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP), several shortcomings were pointed out since it did not rise up to the expectations of operating as a leading financial mechanism under the UNFCCC [Echeverri and MÜller, 2009]. The World Bank also played a significant role through the CIF (Climate Investment Funds) mechanism, a framework operating outside the UNFCCC, which involves the private sector to promote and encourage investment in low-carbon development strategies, agriculture efficacy, resilience measures and energy portfolio, among others. Similarly, there have been several other financial mechanisms that support funding for biodiversity, forestry and climate change, which involve the participation of the World Bank.^v However, there is sparse literature on the effective role played by the World Bank to examine whether its activities, it supports and funds, are of sustainable and environmentally sound nature, given the wide- ranging mechanisms available for this purpose at its disposal.vi

It is against this background that this paper has been attempted. Though it must be noted that a comprehensive study of all of the funding mechanisms that involve the MDBs and especially the World Bank has not been envisaged, the analysis proceeds to examine the principal climate funds in order to bring some clarity on the role of MDBs in a complex climate change regime. Section II will provide a brief on the existing practices of MDBs' integration of environmental standards into their developmental funding activity within the international environmental law regime. The analysis will then proceed to evaluate the World Bank's approach through the main climate funds in a fragmented climate finance regime. Section III deals with more substantial issues, viz., the sustainable funding practices of MDBs, by evaluating their implementation of environmental standards of disclosure of environmental information and public participation and further discuss complaints mechanisms that operate under MDBs framework policies in view of recent developments in the climate change regime. Thereafter, Section IV discusses briefly three projects that have been subjected to detailed analyses by independent inspection panels appointed by MDBs to evaluate their implementation of environmental standards and to examine the nature of the decisions of MDBs complaints mechanisms. The paper concludes by retracing the discussions presented as regards the operation of MDBs in an evolutionary regime and attempts to draw insights from the experience of MDBs and especially the World Bank, to serve as useful lessons in the emerging climate finance regime.

SECTION II

A. MDBs and their Integrated approach to Environment Protection and Development

1. Introduction

The importance of international organisations

especially that of MDBs is largely felt within the international governance framework as they increasingly operate across borders and involve civil society participation through their funding activities. MDBs work closely with countries by providing financial assistance for developmental projects, assisting them in restructuring their economic policies and contributing to the development of their social, economic and environmental standards. This integrated approach the environment and economic towards development has also extended to mobilisation of financial resources in developing countries for supporting climate change mitigation and adaptation [Moncel and Asselt, 2012]. The World Bank, for instance, has played a key role in this arrangement since it has the necessary resources including infrastructure and the knowledge base. It has been in a position to maintain a constant presence in almost all the multilateral financial mechanisms. The remainder of this section while providing a short background and a survey of current practices with respect to the World Bank also analyses its role through the climate finance mechanisms where it is required to employ an integrated approach.

2. World Bank in the context of an international environmental law regime

The World Bank enjoys international legal personality and operates within the framework of the international legal order. The policies and procedures that the World Bank has adopted for its day-to-day operations are typically viewed as conforming to internal rules [World Bank, 1999] which are meant to be viewed in a wider context than the internal legal order of the organisation [Gualtieri, 2002] as is discussed below. Sands and Peel [2012] observed that as international legal persons, MDBs may also have rights and obligations under international law. As they expand their roles and activities in an increasing number of areas, there is a corresponding expansion of responsibility for their interactions with other non-state entities like individuals, groups of individuals, Multi-national enterprises, Non- Government Organisations, minorities and indigenous peoples [Suzuki and Nanwani, 2005].

With respect to its commitment towards environment protection and conservation under international law, the World Bank is guided by the overarching provisions of Agenda 21 [United Nations, 1992] Although not a party to Multilateral Economic Agreements (MEAs) which govern the relationship between countries, the World Bank recognises its commitment to observe international environmental standards set out under various global and regional treaties. The World Bank, an organisation created and governed by public international law, undertakes its operations in compliance with applicable public international law principles and rules. These principles and rules are set forth in instruments such as treaties, conventions, or other multilateral, regional, or bilateral agreements [World Bank, 1996, 1999].^{vii}

As early as 1987, in the report titled 'Report of the World Commission on Environment and Development: Our Common Future', also known as the 'Brundtland Report', the World Commission on Environment and Development (WCED) advanced the understanding of global interdependence and the relationship between economics and the environment [United Nations, 1987]. It emphasised that a particular responsibility falls on the World Bank and the International Development Association as the main conduit for multilateral finance to developing countries to support environmentally sound projects and policies. The report further recognised the crucial role played by multilateral financial institutions, particularly the World Bank in the process of reorienting its programmes towards greater environmental concerns. Andi in this process, it was to be accompanied by a fundamental commitment to sustainable development. Essentially, the report recognised the important role and influence that institutions such as the World Bank played in helping developing countries make the transition to sustainable development. In recent years, what is characteristic is that, over three decades later, when the global sustainable development agenda has entered into its next phase- the post-2015 Development Agenda- the nature of commitments as far as the World Bank's approach is concerned, has changed with importance being given to stakeholder participation and improved transparency and accountability mechanisms.viii This is owing to the World Bank's expansion of roles and activities in wide ranging climate related finance structures and its increased interactions with state and non-state entities through the course of its activities.

3. The World Bank's approach to environment protection

Previously, the World Bank was faced with the challenges of tackling the 'crisis' in dealing with the environmental consequences of its lending activities.^{ix} Since the 1980s, the Bank has assumed a more direct approach in addressing this crisis because many of the projects that it financed resulted in adverse environmental consequencesfor instance, industrial and agricultural projects that pollute the atmosphere or contaminate rivers, highway and dam projects that destroy forests and jeopardize natural animal habitats and resettlement of peoples, including indigenous tribes. From the 1990s, a developmental approach emerged in the Bank's focus on economic growth which takes into account non-economic aspects of development, such as society or the environment.^x More recently, the World Bank is seen to have encouraged wider participation in its funding, especially of private actors in multilateral 8 environmental trust funds to support the mobilisation of financial resources to developing countries.^{xi, xii} The process of integration of environmental considerations in the Bank's loan development activities has been attempted to be accomplished primarily through internal environmental 'safeguard' policies and procedures [Gualtieri, 2002].

From a legal point of view, it has been pointed out that the Bank's policies are merely internal rules that provide guidance to Bank staff in their activities to ensure their consistency with the international mandate of the World Bank [Bekhechi, 1999]. Critically, these policies do not constitute international legal rules, but may enter the international legal order through the international agreements related to the World Bank financed projects. The substantial issue will emerge at the point when aggrieved persons file complaints alleging violations of a bank's internal policies vis-à-vis its project implementation [Suzuki and Nanwani, 2005]. The World Bank is in a position to influence developing countries to change their positions on environmental standards while seeking financial assistance for developmental projects [Shihata, 1992]. Given the 'facilitator' position that the World Bank assumes which bear directly on the implementation of environmental norms and standards, it was found useful to examine the nature of its own guidelines in promoting environment protection and to evaluate its approach.

B. The World Bank and Climate Change Finance

1. World Bank in an evolutionary climate change regime

Given that the World Bank plays an important role in the implementation of the funding mechanisms under the UNFCCC and outside of it, the question that arises is- how are its activities monitored? [Shih, 2000]. The rest of this Section analyses the role of the World Bank in some of the key climate finance mechanisms operating within and outside the UNFCCC's purview. Relevant developments within the climate fund mechanisms are also discussed in view of World Bank's involvement through their operations. The discussion will conclude by analysing the World Bank's operations in an intricate climate finance regime.

a) Global Environmental Facility (GEF)

Under the UNFCCC, the GEF finances projects in developing and transitional economy countries to further global environmental goals, including climate change and biodiversity. Its scope has expanded considerably over a period of time.^{xiii} It acts as an operating entity under the UNFCCC's financial mechanism. More specifically, it serves to provide new and additional grant and concessional funding to meet the agreed incremental costs of measures 10 to achieve agreed global environmental benefits.xiv. Projects and programmes to be funded by the GEF are devised by countries and implemented through GEF's "Implementing Agencies", viz., the UNDP, the World Bank and the UNEP. Over time, it has increasingly been felt that GEF has become more bureaucratic in its operations perhaps because of its affiliation with the World Bank [Greene, 2004].

The World Bank also acts as the Trustee to the GEF Trust Fund [Shih, 2000]. This has raised concerns regarding the excessive influence of the World Bank's role in the operation of the Fund. A study conducted through the European Capacity Building Initiative notes that the GEF's aims to promote projects, international cooperation and knowledge to address global environmental concerns in the developing world, was severely compromised without having consulted the UNFCCC COP and by merely relying upon World Bank indicators [Echeverri and MÜller, 2009]. Given the GEF's dependence on the World

Bank (being the largest of the Implementing Agencies), it seems to have affected the GEF's ability to act as a strong and objective focal point between the competing interests of the MEAs, the Implementing Agencies, and the governments and constituencies which the GEF was established to serve [Werksman, 2003].

With respect to any operational concerns that may be involved,^{xv} so as to ensure that the resources of the GEF are being used in accordance with the GEF Instrument and the decisions taken by the GEF Council the Trustee (the World Bank) is required to work with the Implementing Agencies (which includes the World Bank) and the CEO of GEF, to address and resolve any concerns it may have about inconsistencies between the uses of GEF resources. If there were inconsistencies between the decisions of the GEF Council and the rules of the Trustee, the GEF Council and the Trustee must consult each other to avoid the inconsistency. Although the GEF Council (which is comprised of member countries to the UNFCCC) could ensure some level of accountability through this process, there is no direct process to hold the World Bank accountable. After all, the corpus is made up of public money and its operation needs to be made more accountable. Accountability can be made possible through the Inspection Panel by invoking the Bank's duties as trustee and implementing agency [Gualtieri, 2002]. In fact, cases have reached the Inspection Panel through the GEF mechanism.^{xvi} However, it will be virtually impossible to be able to extract the right information to enable this process to proceed unless there is better transparency.

b) Climate Investment Funds (CIF)

As regards CIF however, the conditions are different as it does not come under the UNFCCC regime. CIF resources are made available through MDBs to assist developing countries to fill financing gaps in supporting efforts aimed at climate mitigation or strengthened resilience to climate change impacts.^{xvii} CIFs are designed as an interim measure for the MDBs to demonstrate what can be achieved through scaled-up financing blended with development finance until the time an agreement on the future of the climate change regime is formalised. Although the CIFs are a parallel mechanism to complement the working of existing financial mechanisms, it is often criticised to have overlapped with the working of, instead of, complementing existing mechanisms such as the GEF.

The IBRD acts as the Trustee for CIF. The CIF's administrative unit viz., the Secretariat is based at the Bank's premises. Furthermore, alongside four other MDBs, the Bank also acts as implementing agency for various CIF programmes. Concerns have been raised as regards the Bank's continued role as trustee.^{xviii}

In view of its role, at an institutional level, the possible questions that need to be addressed are: i) As trustee, what are the nature of obligations for the Bank; whether it follows a particular set of guidelines or those that in general apply to a fiduciary or trustee under general principles of trust or fiduciary law?, ii) If the CIF would be replaced by the GCF (by virtue of its sunset clause taking effect), and perhaps continue to utilise resources that were used by the CIF, whether this will undermine the expectations from a new mechanism?, and iii) whether as a trustee, would its act or omissions come under scrutiny by the Bank's Inspection panel?

c) Green Climate Fund (GCF)

The GCF was established as the new operating entity of the financial mechanism under Article 11 of the UNFCCC.^{xix} It had been conceived as the main multilateral financing mechanism to support climate action in developing countries at the COP 15 held at Copenhagen in 2009, as parties pledged to mobilise \$100 billion in long-term

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financing per year by 2020.^{xx} The governing instrument for the GCF was adopted at the COP 17 meeting held in Durban in 2011^{xxi} and the Fund was to function under the guidance of the COP and also be accountable to it.^{xxii}

The World Bank has been appointed as the interim trustee for the Fund, subject to a review three years after the operationalisation of the Fund.^{xxiii} It is accountable to the GCF Board for performance of its responsibilities as trustee for the Fund.^{xxiv} Unlike the GEF, the GCF sets a more elaborate set of roles and functions for the GCF Board in the operation of important components of the Fund.^{xxv}

The governing instrument for the GCF vests the development of environmental and social safeguards with the GCF Board which is yet to formulate them as per 'internationally accepted standards'. In a meeting in South Korea in 2014, the GCF Board decided that as an interim measure, it would adopt the Performance Standards (PS) of the IFC, until the time it developed its own Environmental and Social Safeguards (ESS). xxvi The explanation given was that it had the 'added benefit of being able to utilise the significant amount of supporting materials already developed by IFC and others based on years of experience.' Furthermore, it also explains that many institutions and organisations were already familiar with IFC's PS and that in the process of developing its own ESS, the latest MDB standards and implementation and experience of other climate funds will be used as benchmarks. This approach which is being taken by the GCF Board reinforces the point that the sustainability frameworks of MDBs are coming to be recognised as a yardstick contributing to the development of international environmental standards in the process of funding as recognised under the UNFCCC. It is hoped that the GCF, through its own ESS framework will develop a more elaborate and effective sustainability policy framework

that would perhaps have learnt from the shortcomings and omissions of the other MDB standards.

2. World Bank functioning through a fragmented system

One of the concerns that arise from a constantly evolving regime is that of fragmentation.^{xxvii} It is felt that operating through a fragmented system could lead to ineffective outcomes. In the context of global climate finance, there are several financial mechanisms which operate in a parallel manner and perhaps even overlap each other although they may operate under their own objectives and operational mandates. While examining the effectiveness of parallel financial mechanisms. Greene [2004] points out that more policy attention needs to be paid to ensure that existing flows are being used as effectively as possible. Financial mechanisms which are meant to play a central role in supporting the implementation of, for instance the UNFCCC, calls for reform. The current arrangement has given rise to a fragmented and complex system owing to large number of funds created to address several specific climate-related objectives, most of which are outside UNFCCC's scope.

The World Bank's presence is prominently visible in almost all forms of overseas development assistance and also in climate-related finance as it has been seen in the above discussions. Given this scenario, the picture that emerges is that of the continued presence of the World Bank in each of these frameworks and its normative approaches in undertaking its respective roles under these frameworks. A favourable factor for the World Bank in all the three elements is its access to infrastructure and resources, knowledge base and experience which it has acquired over a period of time which may not be possible to arrange in a short period for the purposes of operating a new fund. Closer attention therefore needs to be paid to the roles that the World Bank assumes within the climate finance structure to constructively evaluate on whether its performance is indeed reflecting an integrated approach through the course of funding activities.

SECTION III

A. Application of Environmental Law Principles to MDB Activities

1. Introduction

This section will analyse the implementation of environmental standards through the World Bank's lending process. Given the shifting trend in the climate finance regime towards a more formalised funding regime, namely the GCF, the analysis in this section will place the World Bank's role within this setting and evaluate its practices in the implementation of environmental standards. The most important among these standards are: (i) environment impact assessment, (ii) disclosure of environmental information, (iii) public participation and (iv) compliance of which (ii) to (iv) will be discussed. Relative factors will be drawn from examples of the EBRD and IFC to understand their treatment of these standards.

A lot has been written about the accountability of MDBs where the abovementioned issues have been analysed and several gaps pointed out. One of the common views shared by scholars is the influence that MDBs have had through their contribution to the development of international law in promoting sustainable practices. It must be noted however that, while soft obligations apply to MDBs the share of responsibility falls on the borrower country to meet environmental standards. At the same time the borrower country must also observe its commitments under the vast network of MEAs which it is bound to under international law. This makes it difficult to attribute a strong case of responsibility on the MDB.

2. Environmental conditionalities and the World Bank's approach

Under Overseas Development Assistance (ODA) arrangements, "conditionality" is generally understood to mean conditions that are attached to the lending activity that apply to the borrower. With respect to environmental protection it means the attachment of a set of covenants that tests the sustainability of a particular project activity based on the responsibilities undertaken (by the borrower country) in that regard. Conditionality can be said to apply in three ways- i) the screening of the project takes place to conform to World Bank's guidelines, ii) the financing agreements call for actions to be taken by the borrower and iii) continued availability of disbursements under the loan can depend on whether these covenants are honoured. It has been felt that environmental covenants and conditionalities have, to say the least, played a crucial role in paving the way towards a real effort for sustainable development. However, these covenants could leave low income countries feeling discomfited in adhering to strict and unreasonable standards.

Over the years MDBs' policies have undergone several modifications. As they gradually improved in terms of their scope and application, and the environmental assessment procedures became more mandatory in nature, environmental conditionalities have come to be more firmly recognised through these frameworks.

While analysing conditionalities from the context of climate change funds, Werksman [2003] explains that although conditionalities are important in the protection of biodiversity, the ozone layer and the climate system, that may not necessarily be a policy priority for the recipient country. Such conditionalities could operate in a complex political environment and therefore, their application would depend on a highly composite arrangement between the MDB and

borrower country which is likely to yield unforeseeable outcomes. Moreover, given that the nature of climate change developments can be unexpected and sudden, the reaction of a lowincome country to such developments would vary dependent upon wide ranging factors such as its socio-economic conditions, governance structure, gender issues, ability to cope with climate disasters, etc. Therefore, within a climate change regime, a more openly receptive approach needs to be set in place before binding the recipient countries which are faced with constant climate impacts.

3. Access to Environmental Information

The notion of the public's access to information enhances participatory democracy within a political system and acts as an empowering tool in the hands of the civil society that enables them to effectively seek redress for their grievances. The right of access to environmental information constitutes one of the limbs of the 'preventive' approach in environmental law. Environmental information can indeed facilitate the process by which damage to the environment can be prevented. Access to environmental information and public participation were recognised as important components of sustainable development in Principle 10 of the Rio Declaration [UNCED, 1992], which states that, "Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided". The influence of Principle 10 has been seen to have an impact on

MDBs while incorporating environmental consideration into their policies. The Aarhus Convention with its three pillars of 'access to information', 'participation in decision-making' and 'access to justice' is a distinguishable form of MEA in so far as it provides participatory rights to ensure state compliance under MEAs. Although there are no specific provisions that apply directly to international organisations under the Convention, it is interesting to note that the Convention makes it a requirement on the State parties to promote the application of the principles of the Convention in international environmental decision-making processes and within the framework of international organisations in matters relating to the environment [UNECE, 1999].^{xxviii} Therefore, a party by virtue of being a signatory to the Aarhus Convention can be responsible for applying the principles under the Convention to the activities that it undertakes in collaboration with MDBs.

4. MDBs and Disclosure Policies

Without public access to project documentation of MDBs, concerned individuals, project affected persons and environmental groups are unable to participate in decisions in relation to the project. Secondly, their means to hold the project lenders accountable would be restricted owing to lack of information rendering their access to redressal mechanisms ineffectual. A main barrier encountered by civil society in filing complaints or grievances in bank operations relates to information or the lack thereof.xxix If an MDB stresses on the need to disclose information as regards the project activity based on its disclosure policies, then the State will be required to provide such information if it has agreed to abide by these policies. In this regard, the World Bank's disclosure policy states that, before finalising operational documents, it requests the borrower to identify whether the document contains any confidential information relating to the borrower or information whose disclosure may adversely affect relations between the Bank and the country.^{xxx} This takes place before finalising the operational documents for the project and the World Bank makes adjustments based on the representations made by the borrower country bringing in some clarity on the scope of information.

The IFC, on the contrary, seems to have loosely drafted commitments in its disclosure policy. The IFC's Sustainability Policy^{xxxi} has been used as a model by other MDBs in updating their own environmental and social framework. Under its Sustainability Framework, the IFC represents that it seeks to provide 'accurate' and 'timely' information regarding its investment and advisory activities as well as more general institutional information in accordance with its Information Policy (AIP)^{xxxii} Access to Furthermore, it also recognises the importance of disclosure of information, both for itself and its clients, as a means of managing environmental, social, and governance risks. These commitments are very general in nature as far as IFC's role is concerned^{xxxiii} although it lists the 'client's responsibilities' consistent within the IFC's framework.^{xxxiv} It provides that "as part of the process of managing the risks and impacts of their investment projects, IFC requires its clients to engage with communities affected by their projects, including through the disclosure of information, in a manner that is consistent with IFC's and Performance Standards Policy on Environmental and Social Sustainability". If the client were a company and its country's own law may not bind it to provide information in such cases, then it could take advantage of that option. If it were a state which is not bound by its own domestic regulations to disclosure certain information, then appropriate disclosure of the project will not be achieved. Therefore, specific covenants need to be provided in the project documentation to clarify any such divergence where ultimate benefit of the stakeholder or affected person to access information should not be compromised.

Further, the IFC may delay the disclosure of certain information that it would otherwise make publicly available because of market conditions. legal or other regulatory requirements such as timing requirements relating to securities offerings, equity investments in publicly listed companies, purchases of shares in a private placement or a financial restructuring. This prerogative may be exercised by the director responsible for the project, with respect to such information. Such a provision gives wide discretion to the IFC's board to make project information available. There is no responsibility that would apply to IFC to provide the information at an extended time line in case of delay. Moreover, it could so happen that a highly environmentally sensitive project would meet with the IFC approval without ever being subject to public scrutiny.xxxv

By way of response, the World Bank, which has historically shown secrecy and lack of openness in its operations, initiated the process of setting up a legal and policy framework for increased transparency and public participation. Now almost all of MDB projects contain disclosure provisions. It is essential to include binding obligations on the part of the MDB in so far as information disclosure is concerned. But because it is set out in the 'good practices' format, it is not binding upon the World Bank staff and may escape the Inspection Panel's jurisdiction.

5. Public Participation and consultation

Stakeholder's engagement in a project cycle is expected to take place before and during the course of project implementation. In modern conception, public participation is seen as an essential component of socially and environmentally sustainable development that can counteract the tendency of those who plan,

promote, and implement development projects to underestimate the project's 'social and environmental disadvantages'. Agenda 21 [UNCED, 1992] stressed the importance of promoting 'public participation' and 'consultation processes' in the developmental process. It refers to these terms throughout its text in all aspects of environment protection and management. It pointed out that one of the fundamental prerequisites for the achievement of sustainable development is broad public participation in decision-making and in the more specific context of environment and development, the need for new forms of participation has emerged. This includes the needs of individuals, groups and organisations to participate in environmental impact assessment procedures and to know about and participate in decisions, particularly those which potentially affect the communities in

which they live and work.

With respect to World Bank financing, for all Category A and B projects during their EA processes, the borrower country consults project-affected groups and local NGOs about the project's environmental aspects and takes their views into account. Category A Projects are those which are likely to have severe adverse impacts on critical or otherwise valuable natural or cultural resources, while Category B projects which are likely to have less adverse and limited impacts, while Category C projects are those that are expected to have no adverse environmental impacts, or only minimal impacts to be easily and fully mitigated through routine measures. It is the borrower and not the World Bank that must initiate such consultations as early as possible and continue them during project cycle. In addition, the borrower must consult with such groups throughout project implementation as it deems necessary to address EA-related issues that affect them. The failure of the borrower to follow this process could be revealed as a result of the project affected persons requesting information on the project compliance or the World Bank through its

own review. A strict compliance of this process from the start seems difficult as it could result into a long-drawn follow-up process by civil society until the time it reaches the outcomes is discussed through the Inspection Panel.

Under IFC's Performance Standards, the client is required to develop and implement a Stakeholder Engagement Plan that is scaled to the project risks and impacts and development stage, and be tailored to the characteristics and interests of the affected communities.^{xxxvi} While the IFC itself categorises projects before they are sent for approval by the IFC Board of Directors, this categorisation relies on the client's impact assessment process, which itself may have different community engagement requirements. This could minimise the MDB's obligations and the borrower can be held directly responsible. The EBRD's approach to stakeholder engagement is distinctive as it guides the private sector to follow provisions under the Aarhus Convention, giving it more credibility to its approach. Its appraisal requires clients to have identified stakeholders potentially affected by projects, disclose sufficient information about the impacts and issues arising from the projects and consult with stakeholders. By ensuring compliance to such requirements by the client (whether a private company or a host government) engaged in project activity, the MDBs are in essence contributing towards the development of international environmental standards. Therefore, to encourage its progressive action, it is crucial that the operational documents of MDBs specify the parties' commitments towards environment protection and management.

B. Insights on CIF: Stakeholder Participation and Accountability

It must be noted that as much as references have been made to environmental information and accountability standards in the documents of some of the MDBs discussed above, this clarity is not available in so far as the CIF is concerned. The CIF is a unique mechanism which is not established under an international treaty. It disburses loans through the MDBs that support country-led programmes and investments to help developing countries pilot low-emissions and encourage climate resilient development. Its activities are focused on promoting clean technology by providing concessional resources in renewable energy, energy efficiency and sustainable transport.^{xxxvii} The CIF does not come within the purview of the UNFCCC funding mechanisms, although it was initiated to bridge the gap until a new climate agreement is formalised under the UNFCCC. The CIF recognises the UN as the appropriate body for broad policy setting on climate change. In so far as its governing principles are concerned, it merely states that 'MDBs should not pre-empt the results of climate change negotiations' and furthermore, 'any actions to address climate change should be guided by the principles of the UNFCCC. xxxviii This does not provide clarity on the CIF's accountability to civil society. The CIF mechanism has been criticised by civil society to undermine the processes contemplated through the UNFCCC and Kyoto Protocol and that it directly competes with parallel multilateral financing, causing significant overlaps, especially with the UNFCCC-led GEF mechanism.^{xxxix}

A report on an independent evaluation of CIFs was recently released^{x1} that raised critical issues as below:

a. Stakeholder participation: The report points out that there is 'lack of clear CIF guidance on consultation' indicating specific concerns as regards the SCF consultation process at stakeholder engagement level and inclusiveness, particularly with regard to women and indigenous people. By virtue of accountability and legitimate processed to and beneficiaries being limited, opportunities for feedback in implementation seem clearly lacking.

b. Accountability mechanisms: The report points out 'tensions between trusting MDB systems and ensuring accountability at the CIF-level.' Furthermore, it reveals that 'the MDBs have no formal process for quality control, safeguards, or evaluation at the level of the country investment plan,' and the CIF Administrative Unit was not designated or adequately staffed to handle these responsibilities.

The Report also raises a crucial issue with respect to the CIFs role in the future climate finance regime. It states that, "The CIF have not yet clarified their interpretation of how and when to exercise the sunset clause, introducing uncertainty into their operations." The sunset clause requires the CIF to conclude its operations once a new financial architecture is effective. This raises questions as to whether it would have some influence in the new GCF architecture given that the CIF has existing resources and in what way would the GCF mechanism learn and incorporate into its provisions from what the CIF lacked.

C. Sustainability Framework Policies of MDBs

1. The World Bank's Environmental Safeguard Policies

Termed as 'safeguard policies', the objective of the World Bank's Environmental and Social Safeguards are to prevent and mitigate undue harm to people and their environment in the development process. They provide guidelines for the Bank and borrower staff in the identification, preparation, and implementation of programs and projects. Initially consolidated and issued in 1984 as operational manual statements,^{xli} they recalled the Bank's increasing attention towards environmental issues, indicating that projects in most economic sectors might have significant environmental implications. Thereafter, the World Bank adopted Operational Directive 4.01 on environmental assessment in 1989 however it was silent on the requirements concerning the provision of information to local populations and their right to participate in the environmental impact assessment process. In 1999 this policy was converted to Operation Policy (OP) 4.01 and Bank Procedures (BP) 4.01^{xlii} which explain how the Bank staff shall implement the Bank's policies. The World Bank's EA guidance states that the Bank favours "preventive measures over mitigatory or compensatory measures, whenever feasible." This indicates the Bank's consideration of prevention rather than remedial measures, which underlines one of the basic principles of 'preventive action' in international environmental law discussed above.

Given the increasing importance given to Environmental Management Plans (EMP) by MDBs, multinational companies and states, it is essential that this process is given full importance during the implementation and operation of a project to eliminate or offset any adverse environmental impacts. With respect to the Bank's mandate, the EMP forms an integral part of Category A of the EA as also Category B in some cases. With respect to consultation and disclosure on the project activity, it is the borrower country which is required to undertake these obligations. It must consult with project-affected groups and local NGOs about the project's environmental aspects and takes their views into account for all Category A and B projects proposed. Such consultations are required to be initiated early in the project stages.xliii

Furthermore, the borrower country is required to provide relevant material in a timely manner prior to consultation and in a form and language that are understandable and accessible to the groups being consulted. This particular step is crucial as far as the project affected persons are concerned, since it will keep them well informed of the project activities, and assist in bringing substantial claims against the Bank's activities should the need arise. One mechanism for ensuring Bank-level compliance with these policies is the World Bank's Inspection Panel, which conducts compliance investigations based on complaints from communities and people adversely affected by Bank-financed projects.

2. Complaints Mechanisms

Complaints bodies which operate through the MDBs grant civil society a standing before an independent accountability mechanism where affected people from the borrower country bring their concerns for purposes of investigation. MDBs have shifted their focus to both problemsolving and compliance review from simply investigating the compliance or non-compliance of an MDB's operational activities as seen in the case of EBRD. The EBRD Project Complaint Mechanism (PCM) has two functions: a) Compliance Review function which seeks to assess whether a Bank approved project complies with relevant the EBRD's policies, specifically relevant environmental policies and project-specific provisions of the Public Information Policy, and b) Problem-solving Initiative which has the objective of restoring dialogue between the parties, where possible, to trying to resolve the underlying issues giving rise to the complaint or grievance. A problem-solving initiative might include independent fact-finding, mediation, conciliation, dialogue facilitation, investigation or reporting. With respect to World Bank's Panel, it does not directly engage in mediation, and does not provide recommendations for remedial actions to be taken by Bank's Management or the borrower.xliv

Nevertheless, these methods must be ensured to bring enhancement to the MDBs approach in addressing complaints and the essential recourse of providing a direct redressal mechanism for project affected people must not be undermined on account of procedural or multi-layered systems. Since the CIF is operated through a group of MDBs, each of their independent complaint mechanisms would apply to the CIF mechanism. Therefore, individuals and communities who believe they have been or are likely to be adversely affected by a project or program implemented by the MDB, can seek recourse through those mechanisms.

Under a newly constituted GCF,^{xlv} the GCF Board at one of its meetings held in 2014 passed a 'Draft Terms of Reference' for an Independent Redress Mechanism (IRM). It states that this mechanism is similar to that of other climate funds that follow international best practices. Its objective will be to enhance the effectiveness and quality of projects and programmes financed by the Fund. It states that, in attaining these overall goals, the Fund will be responsive to the concerns of those affected by its projects/programmes and treat all stakeholders in a fair and equitable manner, reflecting the highest professional and technical standards for its staffing and operations.

While ensuring transparency and fairness, the IRM will be cost-effective, efficient and complementary to other supervision, audit, quality control and evaluation systems of the Fund. The GCF's governing instrument provides that the IRM will report to it. It will receive complaints related to the operation of the Fund and will evaluate and make recommendations. The instrument, however, does not yet specify the operating framework of this mechanism. It is hoped that the framework formulated by the Board takes into consideration concerns of NGOs and project-affected people by sounding out the experiences of complaints mechanisms operating under other MDBs. It is pertinent to note that while discussing the redressal mechanism, the UNFCCC's Standing Committee had found it difficult to come to an agreement on its details.^{xlvi}

However, in Warsaw, COP 19^{xlvii} the Parties reaffirmed that the GCF Board was fully responsible for funding decisions under the Fund and given its mandate under the GCF's Governing Instrument, it was emphasised that the GCF would be required to include in its annual reports to the COP the recommendations of its IRM and any action taken by the Board of the GCF in response to those recommendations. Furthermore, the COP may provide additional guidance to clarify policies, programme priorities and eligibility criteria as they impact funding decisions. This way, the mechanism is expected to be more open, transparent and accessible.

3. The World Bank's Inspection Panel

The World Bank's Inspection Panel reviews decisions of the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA) upon receipt of a request for inspection from parties in the territory of the borrower.xlviii As of 2014, the Panel had received 95 cases in total. The Bank's Panel process is divided into 4 phasesreceipt of a Request and decision on registration of the request, confirmation of technical eligibility and recommendation on whether to investigate, investigation of claims raised in the Request and actions following an investigation. The parties can claim that their rights or interests have been or are likely to be affected by an action or omission of the Bank and they have suffered or are likely to suffer harm as a result of a failure of the Bank to follow its operational policies and procedures. Among the cases heard by the Panel, a noteworthy issue pertained to the Eskom Project in Medupi, South Africa.^{xlix} It involved a loan of USD 3.75 billion for construction of a coal-fired power plant by the utility company Eskom. The Panel recommended an investigation. This was a Category 'A' project which meant that it was high-risk wherein the borrower is required to engage an advisory panel to advise on all aspects of the project relevant to the EA. The affected communities alleged potential harm as a direct consequence of the project and the Bank's policy non-compliance.¹

The Panel's Investigation Report cites several instances of South Africa's laws not being consistent with the Bank's policies. For example, the Bank policy required that appropriate studies are undertaken proportional to the cumulative impacts; at the time that the Medupi EIA was prepared, an equivalent requirement in South African law did not exist and the project's EIA did not reflect important impacts. In view of the potential significance of harm noted by the Panel, it called for a supervision plan of the project within a results framework to enable timely intervention where necessary to resolve problems. It also called for capacity-building initiatives and human resource development beyond individual project settings to encourage country ownership and sustainability development programs.

It is interesting to note that the Panel functions can apply to the World Bank's role as Trustee and Implementing Agency of the GEF and other multilateral environmental trust funds such as the MFMP. Gualtieri feels that the establishment of the Inspection Panel widens the possibilities for establishing accountability in the context of global trust funds. However, it must be noted that although recourse to the Panel is possible, the Panel's decision may not necessarily lead to a full investigation of allegations against the Bank's non-compliance, since the Panel retains the discretion to not proceed with an investigation if it is satisfied with the Bank's Management response the allegations. This can still disparage any valid legal concerns that are sought to be addressed by the affected persons. In any case, detailed analysis

on issues surrounding the Panel's decisionmaking is not within the scope of our analysis and is being reserved for further discussion later.

SECTION IV CASE STUDY ANALYSIS

A. Introduction

Once a complaints body has addressed the issues raised alleging failure of an MDB to adhere to its environmental and social safeguards, several questions emerge as regards the subsequent outcomes on the MDBs activities:- a) what is the nature of the decision given by the complaints body- whether an MDB is bound to follow the views and recommendations of the panel, b) what is the outcome of its decision on the MDB's activities on the whole, dependent on whether the MDB follows the recommendations- would it modify its position *vis-à-vis* its funding activity and how would that affect the various stake-holders? Some of these aspects will be looked into by analysing three case studies.

B. IFC-funded coal power project using clean technology in India

A mega coal project activity undertaken in the port town of Mundra in the western region of India came under scrutiny on account of its potential to emit huge amounts of Carbon-dioxide (CO2) emissions and its activities to have caused significant environmental and livelihood impacts on the fishing community in the surrounding areas.

The project was Clean Development Mechanism (CDM) approved and supported by the IFC, the private sector arm of the World Bank. IFC financed \$450 million as loan. The project was deemed one of the ambitious power projects being developed to meet the country's high energy demand. The nature of the project was assigned Category 'A' which signified its high potential to cause adverse social and/or environmental impacts that are diverse, irreversible, or unprecedented. IFC was required to take extra measures to contain any adverse impacts caused due to its activities. According to IFC, this project used supercritical coal technology, approved by CDM-Executive Board as a Clean Development Mechanism for power projects in India.^{li}

The Compliance Advisor (CAO) appointed under the IFC mechanism received several complaints from civil society organisations representing the local (affected) communities in the area, identifying concerns in the project. Some of the key environmental impacts listed in the complaint were: -

- * Physical and economic displacement of fisher people from seasonal settlements and fish drying areas in the intertidal zone,
- * Impact of coal ash and other airborne pollution on fish drying and public health,
- * Impacts on marine environment and long-term decline in fish stocks due to destruction of mangroves and construction/operation of the plant,
- Impacts on additional livelihood groups (namely, graziers and salt pan workers) that were not adequately identified or mitigated,
- Failure to consider technically and financially feasible design alternatives to minimise Environment & Social impact
- Inadequacy of IFC's supervision of Environment & Safety (E&S) aspects of the project.

The CAO conducted comprehensive audits including review of documentation, interviews with stakeholders and engaging with technical experts. The CAO's audit report repeatedly mentions that the project's Environment & Social (E&S) assessments were not commensurate with project risk as per IFC's Sustainability Policy and that IFC had failed to address E&S compliance issues during its supervision.^{lii} It also notes the ineffective consultation and disclosure processes undertaken by the main sponsor company. This project started to receive widespread media attention worldwide. The outright nature of the CAO's findings on IFC's non-compliance raised concerns on the IFC's approach in integrating environmental considerations into its decisionmaking. Interestingly, the ADB which was among the other MDBs involved in granting financial assistance for the project had also initiated its own compliance review on the project activities based on a complaint received from civil society members.^{liii}

Clearly complainants were trying various avenues to seek compelling action and review of IFC's project activities. Concerns raised in the complaint were similar to IFC complaint but seem to have been more elaborately framed. In its initial assessment to decide a full compliance review, the ADB prima facie found non-compliance with ADB policies and procedures and evidence that this noncompliance with ADB policies has led to harm or is likely to lead to future harm warranting a full compliance review. Its assessment also revealed that there was failure to hold proper public consultations and the environmental standards and emission levels did not adhere to the World Bank's Pollution Prevention and Abatement Handbook of 1999 [World Bank. 1999b] which was being followed in ADB projects.liv

On the ADB conducting a full review in June 2015, its management submitted a proposed Remedial Action Plan (RAP) to the Board pursuant to the Accountability Mechanism Policy adopted in 2012 [ADB, 2012]. Among the various actions listed some are as action to address ADB's noncompliance in relation to the compliance review panel's findings on:

- disclosure of information and conduct of consultations^{1v}
- on thermal discharge from the outflow channel and loss of livelihood of fisherfolk
 on ambient air quality

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The proposed RAP itself did not bring the project into compliance. It would be the subsequent actions, which would bring the project into compliance. So far 3 Monitoring reports have been issued between 2016 and 2018 noting progress. The most recent report^{lvi} shows promising signs of delivering on the action points.

On a plain comparison of the measures taken between the two MDBs, ADB has clearly made constructive progress. IFC's inadequate, lethargic and lacklustre approach in dealing with the complaints of similar nature have led it to take shelter under the US courts by claiming immunity for its actions. The Supreme Court held limited immunity^{lvii} in this case rendering relief to the complainants and civil society groups supporting the cause on their behalf and allowing IFC to be sued on substantial legal grounds.

C. Complaints mechanisms in REDD-plus ((Reducing Emissions from Deforestation and Degradation) + and supporting forest conservation, sustainable management of forests and enhancement of forest carbon stocks)

: Need for an independent mechanism

The Cancun Agreements called on developing countries to undertake phase-wise activities through national strategy and planning, implementation of policies and measures and resultsbased actions to undertake mitigation measures in the forest sector in accordance with their respective capabilities and national circumstances. While developing and implementing their strategies or plans, developing countries must give due consideration to forest degradation, land tenure issues, forest governance issues, gender considerations and safeguards by ensuring the full and effective participation of relevant stakeholders including indigenous peoples and local communities. These safeguards are commonly referred to as UNFCC REDD-plus safeguards and act as a minimum benchmark to undertake REDD-plus programs in developing countries.

It has been observed that no final conclusion was drawn on the issue of financing and as state parties continued to support readiness activities through a variety of sources inside and outside the UNFCCC, there was no consensus on the role of markets [Morgan, 2011].

The World Bank's Forest Carbon Partnership Facility (FCPF) stepped in to play an influential role in promoting REDD as a carbon trading mechanism. The FCPF was developed by the World Bank's carbon unit to act as a 'catalyst' to promote public and private investment in REDD and support pilot projects for developing and implementing national REDD strategies.^{Iviii} A review report revealed that the FCFP process had been rushed, directed mainly towards a marketbased REDD and dominated by centralised government, with little to no consultation with indigenous peoples, local communities or civil society organisations [Dooley, K., 2005].

A possible gap as far as the safeguard mechanisms are concerned is that, it does not contemplate an independent complaints mechanism under the project arrangement. Therefore, the affected parties will have to approach the mechanism under the particular MDBs framework which is involved in the funding. For example, if the project was promoted by FCFP, then the affected parties would approach the World Bank's Inspection Panel with their grievance, which was the case in Liberia's Development Forestry Sector Management Project.

The World Bank's project in Liberia triggered complaints from affected forest people through the Inspection Panel. The Bank's engagement was to assist Liberia harness the potential of forests to reduce poverty in a sustainable manner and integrate forests effectively into sustainable economic development based on an integrated package of key reforms in the sector. The Project was aimed at supporting institution-building in the public sector, promoting sustainable management of community forests and sustainable agro-forestry systems.

The complainants were community representatives of affected forest people who alleged non-compliance by the World Bank of its operational policies and procedures, including OP/BP 4.01 Environmental Assessment, OP/BP 4.04 Natural Habitats, OP/BP 4.36 Forests, OP/BP 13.05 Project Supervision and the World Bank Policy on Disclosure of Information dated June 2002. The Strategic Sectoral Environmental Assessment (SEA) was required to analyse all possible negative environmental and social impacts of the entire forestry sector. The complaint alleged unfair practices by the government of granting excessive logging concessions to companies and that the Bank had not discouraged this activity. Among the several other issues that were raised, the affected communities alleged that: -

- a) they had not received their share of benefits from commercial logging in their area,
- b) their natural environment was being degraded on account of the World Bank's actions and omissions,
- c) the Bank's Management did not undertake sufficient studies of the sector and what forest uses would be best for the country and the people who live within them prior to its financing of the Project,
- d) the Bank's Management violated its own Policies by not completing and disclosing its Strategic Environmental Assessment for the project,
- e) no survey was conducted to examine different possible forest uses, including community uses and it was uncertain whether the commercial logging path was

the best way for communities to benefit from their forests. Interestingly, the Panel acknowledged through its inspection that revenues generated from non-timber forest products could have generated greater revenues than commercial logging.

The Inspection Panel [World Bank, 2011a] noted the several concerns raised by the complainants and encouraged collaborative efforts to formulate actions. Based on the Management's response to the complaint, the Panel felt that the Bank's Management had taken appropriate steps to address the allegations. From the above case study, it becomes clear that, given the complex nature of issues that emerge from REDD-plus projects, there is a need for an independent complaints mechanism that can address these issues in a more systematic way leading to effective outcomes. While the UNFCCC does not currently offer any such mechanism, the World Bank Inspection Panel, human rights courts and OECD National Contact Points seem to provide opportunities to address certain complaints alleging rights violations related to REDD-plus. However, none of these methods would be capable of addressing comprehensively the REDD-related claims under environmental law spanning the full scope of potential impacts and diverse actors involved including the forests.

C. World Bank renewable energy project using CDM in Chile

By supporting renewable energy projects in developing countries and LDCs where Clean Development Mechanism (CDM) credits are utilised, the World Bank contributes to reducing global Green House Gas (GHG) emissions. Under Article 12 of the Kyoto Protocol to the UNFCCC, CDM allows a country with an emissionreduction or emission-limitation commitment under the Protocol namely, an Annex B Party, to implement an emission-reduction project in developing countries. Such projects can earn saleable Certified Emission Reduction Credits (CERs) equivalent to one tonne of CO2, which can be counted towards meeting targets under the Protocol. It must be noted that although a renewable energy project is supported by the World Bank in a developing country, where the reduction of GHG emissions is monitored, it may still have environmental and social impacts in the area where the project operates. As a consequence of such a project, the following concerns could arise: a) land may have been acquired for the project from poor farmers who depend on it for their sustenance, b) the project could cause displacement of the population living in that region leading to loss of livelihood, c) it can directly impact the environment affecting flora and fauna in that region. The following example is of World Bank's support to a renewable energy project in Chile known as the Quilleco Hydropower Project.

As per the project documentation, the objective of the World Bank's assistance was to provide financial support for private investment projects in the Chilean power sector that reduce global GHG emissions, thereby generating CER credits under the CDM. Although through this mechanism the World Bank aims to assist developing countries in the realisation of CDM potential to enhance sustainable development^{lix} the project activities raised concerns among the local communities.

The Inspection Panel [World Bank, 2011b] registered a request to review alleged harms caused by the project. It was alleged that the region where the affected community lived was negatively impacted by the project which failed to comply with Bank's environmental and social standards. As a result, there was water reduction, agricultural production suffered and livestock dwindled, which in turn directly affected livelihoods and incomes. It was also claimed that the decreased water and the cumulative impacts of the project had negatively affected native flora and fauna (especially fish).

The Panel agreed that a change in the river flow and reduction in water flow was indeed caused on account of the Project activity and its cumulative impact should have been properly analysed as part of the social and environmental impact assessment for the Project. Ultimately however, the Panel did not recommend an investigation of whether there was non-compliance on the part of the Bank with its operational policies and procedures since it felt that the Bank's Management was taking sufficient follow-up actions by communicating with the project affected community and was reassured by the Bank's Management on its compliance with respect to social and environmental aspects.

E. Concluding Remarks

From the analysis provided in three examples, a common factor that can be deduced is the nature of concerns raised in all the three situations, although the outcomes of decisions vary. As a result of the project activities, all three denote adverse environmental impacts, loss of livelihood on account of occupation being taken away, loss of land/land tenure rights, loss and damage to biodiversity and natural habitat, leading to decrease in flora and fauna and displacement of communities.

Given that such projects have similar impacts on the society and environment, the outcomes differ on account of varied complaints structures being followed and depending on the MDB which finances the project. As it has been seen, different approaches are adopted among each of the MDBs' complaints mechanisms which would undoubtedly lead to varied outcomes. Such a fragmented system can only lead to incoherent redressal system. Ultimately, the consideration given to the rights of project affected communities including the environment itself is undermined in this whole process. It is hoped that the GCF's Independent Redress Mechanism (IRM) will bring uniformity and coherence which will take into account the shortcomings as such to overcome the unnecessary overlaps and inefficient treatment towards environment protection standards.

SECTION V A. Future Role of the World Bank in the Climate Change Regime

It is quite apparent that international financial institutions have substantial potential to reduce GHG emissions and create and preserve carbon sinks because they finance large-scale development projects throughout the world.

A major concern prevalent is that in spite of having the largest renewable energy portfolio, the World Bank continues to lend support to fund fossil fuel-related projects in developing countries. Dannenmaier, [2011] feels that as far as the World Bank is concerned, climate change which is seen as a development concern must be considered as part of its environmental assessment process.

Responding in part to a 2010 report from the World Bank's Independent Evaluation Group (IEG), the World Bank Board instructed the management to revise the existing safeguards policies to increase coverage, social inclusion, and harmonisation across the Bank Group; enhance client capacity, responsibility and ownership; strengthen safeguards supervision, monitoring. evaluation to ensure rigorous implementation of our policies; and improve accountability and grievance redress systems and instruments for communities and individuals who want to express their concerns about World Bank-financed investment projects.

Accordingly, in 2012, the World Bank began a review of its environmental and social safeguard policies with a view to upgrade the framework. The main objective of the review was to strengthen the effectiveness of the safeguard policies in order to enhance the development impact of World Bank-supported projects and programs. This process which began in 2012 and went on for nearly 4 years when the new environmental and social framework was announced in 2016. Under the umbrella "Vision for Sustainable Development, it sets out the Bank's aspirations regarding environmental and social sustainability" [World Bank, 2016]. The Bank provided a new set of environmental and social policies called 'Environmental and Social Framework' (ESF) which is to extend to all new World Bank investment project financing activities and which sets out the mandatory requirements that apply to the Borrower and projects. This effort was seen as an effort to modernise the Bank's approach to environmental and social risk management and enhance efficiency for both the Bank and borrower countries.

This Framework replaced the following Operational Policy (OP) and Bank Procedures (BP): OP/ Piloting the Use of Borrower Systems to Address Environmental and Social Safeguard Issues in Bank-Supported Projects; OP/BP4.01, Environmental Assessment; OP/BP4.04, Natural Habitats; OP4.09, Pest Management; OP/BP4.10, Indigenous Peoples; OP/BP4.11, Physical Cultural Resources; OP/ BP4.12, Involuntary Resettlement; OP/BP4.36, Forests: and OP/BP4.37, Safety of Dams. However, this Framework did not replace OP/BP4.03, Performance Standards for Private Sector Activities; OP/BP7.50, Projects on International Waterways; and OP/BP7.60, Projects in Disputed Territories.BP4.00.

The ten Environmental and Social Standards, set forth in the document, establish the standards that the Borrower and the project will have meet through the project life cycle, as follows:

 * (ESS1) Environmental and Social Standard 1: Assessment and Management of Environmental and Social Risks and Impacts;

- * (ESS2) Environmental and Social Standard 2: Labour and Working Conditions;
- * (ESS3) Environmental and Social Standard 3: Resource Efficiency and Pollution Prevention and Management;
- * (ESS4) Environmental and Social Standard 4: Community Health and Safety;
- * (ESS5) Environmental and Social Standard 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement;
- * (ESS6) Environmental and Social Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources;
- * (ESS7) Environmental and Social Standard 7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities;
- * (ESS8) Environmental and Social Standard 8: Cultural Heritage;
- * (ESS9) Environmental and Social Standard 9: Financial Intermediaries; and
- * (ESS10) Environmental and Social Standard 10: Stakeholder Engagement and Information Disclosure.

Environmental and Social Standard ESS1 is to be made applicable to all projects for which Bank Investment Project Financing is sought. More specifically, ESS1 establishes the importance of: (a) the Borrower's existing environmental and social framework in addressing the risks and impacts of the project; (b) an integrated environmental and social assessment to identify the risks and impacts of a project; (c) effective community engagement through disclosure of project-related information, consultation and effective feedback; and (d) management of environmental and social risks and impacts by the Borrower throughout the project life cycle. The Bank requires that all environmental and social risks and impacts of the project be addressed as part of the environmental and social assessment conducted in accordance with ESS1.

ESS2-10 set out the obligations of the Borrower in identifying and addressing environmental and social risks and impacts that may require particular attention. These Standards establish objectives and requirements to avoid, minimise, reduce and mitigate risks and impacts, and where significant residual impacts remain, to compensate for or offset such impacts. The Bank would issue a Bank Directive Addressing Risks and Impacts on Disadvantaged or Vulnerable Individuals or Groups, which will set out mandatory requirements on Bank staff relating to the identification of disadvantaged or vulnerable individuals or groups, and the process whereby differentiated measures will be developed to address the particular circumstances of such individuals or groups.

The Bank is also to issue an Environmental and Social Procedure, which will set out Management approved mandatory environmental and social procedures which apply to projects supported by Investment Project Financing. The Environmental and Social Procedure will describe how the Bank conducts its due diligence of a project being proposed for Bank support.

The Framework will also be accompanied by non-mandatory guidance and information tools to assist Borrowers in implementing the Standards, Bank staff in conducting due diligence and implementation support, and stakeholders in enhancing transparency and sharing good practice.

The World Bank Access to Information Policy, which reflects the Bank's commitment to transparency, accountability and good governance, applies to the entire Framework and includes the disclosure obligations that relate to the Bank's Investment Project Financing.

Borrowers and projects would also be required to apply the relevant requirements of the World Bank Group Environmental, Health and Safety Guidelines (EHSGs). These are technical reference documents, with general and industry specific examples of Good International Industry Practice (GIIP).

The Framework includes provisions on grievance redress and accountability. A Banksupported project will include a number of mechanisms for addressing concerns and grievances arising in connection with a project. Project-affected parties will have access, as appropriate, to project grievance mechanisms, local grievance mechanisms, the Bank's corporate Grievance Redress Service and the World Bank Inspection Panel. After bringing their concerns directly to the World Bank's attention and giving Bank Management a reasonable opportunity to respond, project-affected parties may submit their complaint to the World Bank's independent Inspection Panel to request an inspection to determine whether harm has occurred as a direct result of World Bank noncompliance with its policies and procedures.

The importance of integrating developmental activities by taking into consideration climate change issues has been emphasised in the review consultations. Among the several recommendations that were considered during consultations. it was suggested that the process must incorporate climate change in new safeguard policies by taking them into account not only in project design, but also in implementation. It was also recommended that future for climate finance architecture and any safeguard policy changes should be considered in light of the work supported through the Green Climate Fund. Therefore, the World Bank's new framework of its safeguards policy to accommodate climate change considerations will hopefully provide some directions as to the level of commitments that would apply to the Bank in undertaking its activities going forward.

B. CONCLUSION

This essay has examined issues related to

governance and implementation with respect to MDBs and especially the World Bank in order to understand their roles in an evolutionary environmental law regime. The recent developments in the climate change regime can be seen as contributing to the expansion of the MDBs' roles and functions, especially in their interactions with state and non-state actors. However, the fragmented system in which the MDBs operate, poses several challenges including the potential of weakening the governance procedures and undermining democratic processes.

The Bank's mandate has indeed developed over time so as to integrate environmental considerations into its development funding activities albeit concerns that continued to exist with respect to the adverse environmental impacts caused on account of its activities. Notably, its involvement in climate-related finances still remained wholly impervious to legal scrutiny. Several shortcomings were seen through the World Bank's operation of funds such as the CIFs and also the GEF which operates under the UNFCCC. Moreover, the Bank's private sectorarm IFC continued to support fossil fuel projects in developing countries.

The World Bank's proactive approach towards environment protection standards could be seen distinctly in its conduct of ensuring that borrower states conform to its environment safeguards procedures. However, the Bank should not have used this reason to shift the blame onto the borrower countries or postpone its response in addressing the concerns raised by project affected persons when they placed requests before the Inspection Panel. The Bank and MDBs needed to engage and invest in formalised capacity-building arrangements and community awareness programs to be in a better position to assess the concerns of local communities and the environment. Agenda 21 stressed on the need to build capacity within multilateral development

agencies for integrating biodiversity concerns, potential benefits and opportunity cost calculations into project design, implementation and evaluation processes, as well as for evaluating the impact on biological diversity of proposed development projects. If designed and implemented well, such capacity building could have enhanced the sustainability of projects, and contribute to long-term institutional development.^{lx} This should have formed a mandatory requirement under the project's screening process based on which the decision to proceed with the project should have been undertaken. This would have enabled the Bank to harmonise with its Bank's approach in favouring preventive measures over mitigatory or compensatory measures.

At the threshold of a new developmental agenda phase^{lxi} on reflection on the Bank's gradual progress towards embracing sustainable development principles within its lending, it has been seen that the Bank has been increasingly supporting 'clean technology' projects and its portfolio on renewable projects seems to have expanded.^{1xii} However, in spite of its re-oriented approach in undertaking projects that finance so-called 'clean' projects, the case study analysis distinctly revealed that basic concerns such as those affecting the local communities and causing degradation to existing flora and fauna were still being overlooked. The concerns which arise as a result of climate-finance allocation raises important considerations as regards the governance of climate-related funds, including the decision-making power of contributors and recipients and the framework for prioritising the allocation of limited resources among competing priorities, that need to be taken into account.

It has been aptly stated that much of the legal literature on the effectiveness of MDBs' environmental policies and safeguards has focused on whether the MDBs adopted environmental policies and while not focussing on the impact of the policies themselves.^{biiii} Therefore, this gap needed to be filled. The shortcomings of the existing arrangements of the financial mechanism under the UNFCCC have given rise to multiplicity of funding mechanisms that have proliferated outside its purview. The inadequacies in the current mechanism of GEF and the delay in mobilising funds through the GCF have essentially led to this proliferation. Such a fragmented climate finance system can diminish the effectiveness of the objective sought to be achieved under the UNFCCC mechanism, namely, that the financial mechanism as envisaged shall have an equitable and balanced representation of all Parties within a transparent system of governance. Moreover, with the increased participation of private actors, the possibility of ensuring stricter governance procedures seemed to have been diluted as more levels of complexities have been added to an already intricate regime.

However, two new developments that can be expected to influence the future climate finance regime and will see MDBs assuming more predominant roles within the climate finance regime. First, the World Bank has revised its environmental and social safeguards. Although it is too soon to predict the direction that it could take, it is hoped that it will provide for mandatory nature of obligations that apply to the World Bank as the lending organ that will include firmer commitments in disclosure policies and public consultation since these constitute fundamental processes in project screening. Second, the GCF has becoming fully operational. Based as an interim measure, the Performance Standards of the IFC have been adopted until the GCF Board formulates its own environment and social safeguards.

But there are some misgivings about the new framework finalised by the Bank in 2016. In a critique, Passion et.al., [2017] felt that the new ESF and the standards developed through a thorough review of the Inspection Panel's cases

provide future Panels with ample opportunity to reinforce the Bank's compliance with the ESSs and provide redress for environmental and social harms arising from Bank-financed projects. They emphasised that the Bank has a strong interest in ensuring that the Inspection Panel maintains and pursues its function as its legitimacy depends on it. Moreover, given that the Bank has historically portrayed itself as a leader among development lenders by setting that standards multi-lateral organisations follow, if the Bank shrinks from its responsibility for the ESSs by claiming they are in the domain of the borrower, merely following the new ESF will be perceived as merely a window dressing exercise. If the Bank does not explicitly recommit itself to high environmental and social standards and reaffirm the prominence of the Inspection Panel, there is a serious risk that some States might be emboldened to refuse the Inspection Panel access or to intimidate witnesses from cooperating with the Inspection Panel. In other words, if States interpret the ESF as allowing them to keep the Bank (and the Inspection Panel) at arm's length from their projects, it would significantly jeopardize the Inspection Panel's accountability function. Given the Bank's incentives and the Inspection Panel's available tools, the Inspection Panel not only has the potential to fulfil its same function under the new ESF, but may also serve as a device that mitigates some concerns born from the shift towards borrower ownership of bank-financed investment projects.

In conclusion, multilateral finance through MDBs cannot escape the relevance and application of the integration of environmental considerations into any developmental funding that they undertake, including in climate finance activities. Since MDBs continue to play an important role in the elaboration of rules of international environment law relating to the provision of financial resources for sustainable development they must ensure that substantive commitments follow through effective implementation and consistent practices at the same time evolving through exemplary models in the future direction of the climate finance regime [Sands and Peel, 2012].

NOTES

i The term "Multilateral Development Banks" (MDBs) refers mainly to the World Bank Group which is made up of the International Bank for Reconstruction and Development (IBRD), the International Development Association (IDA), the International Finance Corporation (IFC) and the Multilateral Investment Guarantee Agency (MIGA) and the regional development banks, viz., the African Development Bank (AfDB), the Asian Development Bank (ADB) Inter-American Development Bank (IADB). The focus of this paper is on the World Bank and relevant comparisons will be drawn from the other MDBs, especially the EBRD and the IFC.

ii For example, the World Bank assistance for the Eskom project in South Africa for generation of coal and IFC finance for a coal power plant in India.

iii There are instances where the World Bank was compelled to withdraw from large projects. See for instance, one of the earlier projects, viz., Arun III Hydroelectric Project in Nepal which was the first case heard by the World Bank's independent review body, the Inspection Panel which recommended its discontinuation [World Bank, 1995]. Also Accessible at http://documents.worldbank.org/curated/en/19 95/06/4297693/nepal-arun-iii-hydroelectric-project-investig ation-report. Also see Gualtieri [2002].

iv The World Bank places a preliminary screening of all projects for their environmental consequences as soon as a possible project is identified. For a background discussion on the World Bank's policies see Bekhechi [1999].

v For instance, Multilateral Fund for the Implementation of the Montreal Protocol, Prototype Carbon Fund, Forest Investment Program-under CIF, Adaptation Fund-UNFCCC, Clean Technology Fund-CIF, Forest Carbon Partnership Facility-CIF, Pilot Program for Climate Resilience-CIF, Scaling-Up Renewable Energy Program for Low Income Countries-CIF, Strategic Climate Fund-CIF. Although the paper does not delve into an analysis of all these funds, relevant references have been made to them, wherever necessary. See For example, Steer and Mason [1995].

vi The focus of most scholarly work has been related to the development funding assistance of MDBs towards infrastructure projects and issues mostly pertaining to their responsibility of in terms of adequate environmental protection measures. vii see World Bank EA Sourcebook [World Bank, 1996]. The Bank's Environmental Assessment (EA) Policy was set out in Operational Directive (OD) 4.01 brought out in 1989 which was converted to Operational Policy 4.01 in 1999 [World Bank, 1999a]. The World Bank EA Sourcebook Update provides up-to-date guidance for conducting EAs of proposed projects. The Sourcebook provides practical guidance for designing sustainable Bank-assisted projects. Accessible at: <htp://siteresources.worldbank.org/INTSAF EPOL/1142947-1116497123103/20507399/Update10Intern ationalAgreementsOnEnvironmentAndNaturalResourcesMa rch1996.pdf>

viii A more recent instrument, Report of the United Nations Conference on Sustainable Development Rio [United Nations, 2012], adopted at Rio de Janeiro, Brazil 20-22 June 2012, puts emphasises on stakeholder participation, improved transparency and accountability mechanisms.

ix See Herbert [1996]

x For a detailed discussion on the broadening of World Bank's mandate in promoting developmental issues, see Sanae [2013].

xi The CIF mechanism encourages private sector participation either through initiatives via the public sector such as public-private partnerships or directly through the private sector arms of the MDBs.

xii It may be useful to recall that the drafters of the Articles of Agreements of the International Bank for Reconstruction and Development (IBRD) (which together with the International Development Association and three more institutions forms the World Bank Group) did not perceive environment protection as subject matter for its lending operations, nor did they refer to the term 'environment' or 'sustainable development' since development was the focus. In comparison, the European Bank for Reconstruction and Development, established in 1991, provided a much more ambitious set of provisions. Article 2 of the agreement establishing the EBRD lists out the functions of EBRD and states that the Bank shall assist recipient member countries to implement structural and sectoral economic reforms and to help their economies become fully integrated into the international economy and to promote in the full range of its activities environmentally sound and sustainable development. Thus, the EBRD's mandate to promote environmentally and socially sustainable development is clearly established in its constituent instrument. And this externalises its commitment. The fact that the EBRD primarily finances the private sector gives it the added credibility in promoting sustainable environmental practices even across the private sector. See full text of the agreement: < http://www.ebrd.com/downloads/research/guides/basics.p df>

xiii For GEF Operational Guidelines for The Application of the Incremental Cost Principle GEF/C.31/12, Also accessible at https://www.thegef.org/gef/sites/thegef.org/fil es/documents/C.31.12%20Operational%20Guidelines%20f or%20Incremental%20Costs.pdf,

xiv For GEF Operational Guidelines for The Application of the Incremental Cost Principle GEF/C.31/12, Also accessible at https://www.thegef.org/gef/sites/thegef.org/fil es/documents/C.31.12%20Operational%20Guidelines%20f or%20Incremental%20Costs.pdf,

xv See Paragraph 15 of the Instrument for the Establishment of the Restructured Global Environment Facility October 2011 [GEF, 2011]

xvi For example, see World Bank [2007] Also see website http://ewebapps.worldbank.org/apps/ip/Pages/ViewCase.a spx?CaseId=65>

xvii See MDBs role and CIF on CIF website < https://www.climateinvestmentfunds.org/cif/node/48>

xviii See Bretton Woods Project [2011]. See also Tan, C. [2008]

xix See COP 16 Decision 1/CP.16, see [UNFCC, 2010].

xx See Schalatek, L. et al. [2012] Also Accessible at: ht tp://www.odi.org/sites/odi.org.uk/files/odi-assets/publicatio ns-opinion-files/7595.pdf,

xxi UNFCCC COP 17, Durban, Decision 3/CP.17, UN Doc. Launching the Green Climate Fund UN Doc. FCCC/CP/2011/9/Add.1 [UNFCC, 2011]

xxii Decided at the UNFCCC COP 18, Doha, Decision 7/CP.18 9th plenary meeting, December 2012. [UNFCC, 2012]

xxiii The Governing Instrument for the Green Climate Fund which was approved by the UNFCCC COP 17 on 11 December 2011 in Durban, South Africa, and is annexed to decision 3/CP.17 presented in UNFCCC document FCCC/CP/2011/9/Add.1 ('GCF Governing Instrument') [UNFCC, 2011].

https://www.int/resource/docs/2011/cop17/eng/09a01.pdf,

See also Haroldo [2011] where it is observed that the Bank is the preferred trustee candidate for developed country parties, but it is seen by many developing countries as an institution that represents the interests of wealthy countries.

xxiv see UNFCC [2011] Paragraph 27, GCF Governing Instrument.

xxv see UNFCC [2011] Paragraph 9, which states that the GCF Board will comprise of 24 members, composed of an equal number of members from developing and developed country Parties.

xxvi See GCF [2014] Paragraph 32.

xxvii In the context of international climate change, See Bodansky, D. and Diringer, E. [2010].

Also Accessible at: http://www.c2es.org/docUploads/evolut ion-multilateral-regimes-implications-climate-change.pdf:

xxviii See UNECE [1998] Article 3 (7) Aarhus Convention, See also Gaultieri [2002]. Further, the World Bank and other regional MDBs are 'international organisations' as per Draft Articles on the Responsibility of International Organisations [ILC, 2011].

xxix See Nanwani [2008] The author believes that the absence of publication of an information brochure as highlighted by various NGOs in the case of IDB's independent investigation mechanism creates a gap between the institution's initiative to set up and promote an accountability mechanism and the need for information by civil society members who are unaware of how the system operates. He suggests that this can be addressed by a simple, easy-tounderstand brochure made available on the bank's website or through the bank's offices and distributed to project beneficiaries during project preparation and implementation. xxx See Paraeraph 20. World Bank [2013]

Also accessible at http://documents.worldbank.org/curated/ en/843001468166481505/The-World-Bank-policy-on-acces s-to-information

xxxi For IFC Sustainability Policy, see IFC [2012a] Also available at <http://www.ifc.org/wps/wcm/connect/b9dacb0 04a73e7a8a273fff998895a12/IFC_Sustainability_+Framew ork.pdf?MOD=AJPERES>

xxxii see IFC [2012b] on Access to Information Policy. Also Accessible at //www.ifc.org/wps/wcm/connect/98d8ae 004997936f9b7bffb2b4b33c15/IFCPolicyDisclosureInform ation.pdf?MOD=AJPERES>

xxxiii See IFC [2012b] paragraph 8, Taking into account its roles and responsibilities, IFC makes available information concerning its activities that would enable its clients, partners and stakeholders (including Affected Communities), and other interested members of the public, to understand better, and to engage in informed discussion about, IFC's business activities, the development outcomes and other impacts of its activities, and its overall contribution to development. The information IFC makes available in accordance with these principles can be categorised as: (a) institutional information about IFC; and (b) project-level information regarding investments and advisory services supported by IFC.

xxxiv 'Clients' here means the private partner or the host state borrower involved in the project activity of the IFC.

xxxv See Bowles *et al.*, [1999]. The authors are also concerned that, "although IFC requires the sponsor to include information from a project-specific environmental audit, an

environmental management plan, or environmental mitigation plan in an environmental assessment, it does not make public the environmental conditions included in the loan covenant."

xxxvi Performance Requirement No.1 of the IFC Sustainability Policy pertains to Assessment and Management of Environmental and Social Risks and Impacts. For a detailed discussion on the performance standards that apply to private sector clients, Also see Bradlow and Chapman [2011]

xxxvii It follows a country-led approach integrated into country-owned development strategies, consistent with the Paris Declaration on Aid Effectiveness [OECD, 2005] a non-binding instruments adopted by OECD nations which lists out the member's commitments in implementing effective aid strategies.

xxxviii See for example, Paragraph 25.b in CIF [2008] of the Governance Framework for the Clean Technology Fund, adopted in November 2008 and amended in December 2011.

xxxix See Lattanzio [2010] Also accessible at: <http://fpc.state.gov/documents/organisation/210682.pdf>

xl See Independent Evaluation of CIFs, Volume 1: Draft Evaluation Report Accessible at http://www.cifevaluation .org/docs/cif_evaluation_final.pdf?utm_source=website&ut m_medium=homepage&utm_content=full_eval&utm_camp aign=cifevaluation>

xli see Sands and Galizzi [2004]

xlii The World Bank's Environment Policy can be accessed: http://web.worldbank.org/WBSITE/EXTERNA L/PROJECTS/EXTPOLICIES/EXTOPMANUAL/0,,conten tMDK:20064724~menuPK:64701637~pagePK:64709096~ piPK:64709108~theSitePK:502184,00.html>

Currently, the other Bank statements that relate to the environment include OP/BP 4.02, Environmental Action Plans; OP/BP 4.04, Natural Habitats; OP 4.07, Water Resources Management; OP 4.09, Pest Management; OP/BP 4.10, Indigenous Peoples; OP/BP 4.11, Physical Cultural Resources; OP/BP 4.12, Involuntary Resettlement; OP/BP 4.36, Forests; and OP/BP 10.00, Investment Project Financing . see World Bank [1999 and 2013].

xliii For Category A projects, the borrower consults these groups at least twice: (a) shortly after environmental screening and before the terms of reference for the EA are finalised; and (b) once a draft EA report is prepared. In addition, the borrower consults with such groups throughout project implementation as necessary to address EA-related issues that affect them.

xliv See World Bank [2014] Also accessible at: <http://ewebapps.worldbank.org/apps/ip/PanelMandateDocuments /2014%20Updated%20Operating%20Procedures.pdf>

xlv see UNFCC [2014] Also Accessible at: http://gcfun d.net/fileadmin/00_customer/documents/pdf/GCF_B_06_06 _Terms_of_Reference_final_IEU_IIU_IRM_13_Feb2014.p df,

xlvi See [UNFCC, 2013a] Report of the fourth meeting of the Standing Committee on Finance Bonn, Germany, UNFCCC SCF/2013/3/11, 15-17 June 2013

Also accessible at: <http://unfccc.int/files/cooperation_and_ support/financial_mechanism/standing_committee/applicati on/pdf/scf_4_report_230813.pdf>

xlvii See UNFCC [2013b]

xlviii For a detailed analysis on the Panel and background on its establishment, see Gualtieri [2002].

xlix South Africa: Eskom Investment Support Project, see World Bank [2010] See full Investigation Report: http://ewebapps.worldbank.org/apps/ip/PanelCases/65-Investigation n%20Report%20(English).pdf>

l Essentially the claims alleged harms related to increased health problems, decreased water availability, exacerbation of the effects of climate change and cultural and livelihoods changes.

li See IFC's Summary of Proposed Investment for Tata Ultra Mega, Accessible at:

http://ifcext.ifc.org/ifcext/spiwebsite1.nsf/0/EAB8E042D64 3A6EC852576BA000E2B15, This means that the project will reduce the average carbon emissions of India's electricity generation system per unit of electricity supply.

lii See CAO Audit Report, CAO Audit of IFC CAO Compliance, C-I-R6-Y12-F160 dated August 22, 2013, Accessible at: http://www.cao-ombudsman.org/cases/docu ment-links/documents/CAOAuditReportC-I-R6-Y12-F160. pdf,

liii For details on ADB's progress on the complaint, see http://compliance.adb.org/dir0035p.nsf/alldocs/RDIA-9CQ 3SS?OpenDocument.

liv To see the full ADB Report on Eligibility, Accountability Mechanism Compliance Review Panel [27 December, 2013] see: http://compliance.adb.org/dir0035p.nsf/attachme nts/CRP%20Mundra%20Eligibility%20Report%2020Jan% 20FINAL%20Edited%20Managements%20Response.pdf/\$ FILE/CRP%20Mundra%20Eligibility%20Report%2020Jan %20FINAL%20Edited%20Managements%20Response.pdf,

lv Remedial actions approved by the ADB Board in June 2015: https://compliance.adb.org/dir0035p.nsf/attachments/R44- 15% 20(as% 20posted% 203% 20July% 202015).p df/\$FILE/R44-15% 20(as% 20posted% 203% 20July% 202015).pdf lvi See ADB [2016] CRP 3rd Annual Monitoring Report. Also accessible at: https://compliance.adb.org/dir0035p.nsf /attachments/Mundra%203rd%20Monitoring%20Report-Fo r%20Web.pdf/\$FILE/Mundra%203rd%20Monitoring%20R eport-For%20Web.pdf

lvii A full text of the decision is accessible here: https:// www.supremecourt.gov/opinions/18pdf/17-1011_mkhn.pdf

lviii The FCPF and the Forest Investment Program (FIP) together form the World Bank's pilot programmes that help countries prepare for REDD and to provide strategic and transformative investments in the forest sector. See Dooley *et. al.*, [2008]. For more reports on the World Bank's FCPF, see http://www.brettonwoodsproject.org/2011/04/art-567943/>http://www.brettonwoodsproject.org/2011/04/art-567943/>http://www.brettonwoodsproject.org/2011/04/art-567943/>http://www.brettonwoodsproject.org/2011/04/art-567943/>http://www.brettonwoodsproject.org/2011/04/art-567943/>http://www.brettonwoodsproject.org/2011/04/art-567943/>http://www.brettonwoodsproject.org/2011/04/art-567943/>http://www.brettonwoodsproject.org/2011/04/art-567943/>http://www.brettonwoodsproject.org/2011/04/art-567943/>http://www.brettonwoodsproject.org/2011/04/art-567943/>http://www.brettonwoodsproject.org/2011/04/art-567943/>http://www.brettonwoodsproject.org/2011/04/art-567943/>http://www.brettonwoodsproject.org/2011/04/art-567943/>http://www.brettonwoodsproject.org/2011/04/art-567943/>http://www.brettonwoodsproject.org/2011/04/art-567943/>http://www.brettonwoodsproject.org/2011/04/art-567943/>http://www.brettonwoodsproject.org/2011/04/art-567943/>http://www.brettonwoodsproject.org/2011/04/art-567943/>http://www.brettonwoodsproject.org/2011/04/art-567943//http://www.brettonwoodsproject.org/2011/04/art-567944//http://www.brettonwoodsproject.org/2011/04/art-56794//http://www.brettonwoodsproject.org/2011/04/art-56794//http://www.brettonwoodsproject.org/2011/04/art-56794//http://www.brettonwoodsproject.org/2011/04/art-56794//http://www.brettonwoodsproject.org/2011/04/art-56794//http://www.brettonwoodsproject.org/2011/04/art-56794//http://www.brettonwoodsproject.org/2011/04/art-56794//http://www.brettonwoodsproject.org/2011/04/art-56794//http://www.brettonwoodsproject.org/2011/04/art-56794//http://www.brettonwoodsproject.org/2011/04/art-56794//http://www.brettonwoodsproject.org/2011/04/art-

lix See Gadde. et. al., [2011] Also Accessible at: http:// siteresources.worldbank.org/EXTCARBONFINANCE/Res ources/SB_Increasing_Energy_Access_Final.pdf, Accessed 24 July 2014

lx See the World Bank's explanation on 'Capacitybuilding' at <http://web.worldbank.org/WBSITE/EXTERN AL/COUNTRIES/EASTASIAPACIFICEXT/EXTEAPRE GTOPENVIRONMENT/0,,contentMDK:20282943~menuP K:502915~pagePK:34004173~piPK:34003707~theSitePK: 502886,00.html>

lxi ...The World Bank is already setting up ambitious targets to support a sustainable post-2015 development framework.

lxii World Bank's current projects in Latin America and wind power projects supported by the World Bank in Turkey, Egypt and Jordan.

lxiii see Bowen [2010]

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EMERGING CHALLENGES FOR URBAN TRANSFORMATION IN INDIA WITH PARTICULAR REFERENCE TO THE TRANSPORT SECTOR

S. Sriraman

The urbanisation process has been quite rapid all across the world in the past several decades resulting in high rates of growth of economies while, at the same time, being accompanied by severe problems of inadequate housing and other infrastructural facilities like transport, water supply, etc. Even in a developing country like India, issues arising out of urban growth and thereby urban transformation are assuming great significance. In this paper, we examine the various issues that have been thrown up in India in the past as a result of transformation of economies into urban ones and the challenges that are currently being faced especially in the context of provision of transport services in the course of attempts being made in cities to be made more smart and live able by way of an adequate level of delivered public services which are required to support a good and reasonable quality of life for everyone who resides there.

Key Words: Urban Transformation, Urban Transport Problem, Inclusive growth, Smart cities growth, futuristic challenges

1. INTRODUCTION

The urbanisation process has been quite rapid all across the world in the past several decades resulting in high rates of growth of economies while, at the same time, being accompanied by severe problems of inadequate housing and other infrastructural facilities like transport, water supply, etc. Important characteristics of these problems relate to the scale and intensity of such problems, the inadequacy of available resources to tackle these effectively and, above all, poor governance frameworks.

Even in a developing country like India, issues arising out of urban growth and thereby urban transformation are assuming great significance. While it has been continuously emphasised that urbanisation provides countries with the potential to transform their economies to join the ranks of advanced nations in both prosperity and livability, a study Ellis and Roberts [2016] found that countries in the South Asian region, while making strides, were struggling to make the most of the opportunities offered by urbanisation. One important reason is that its urbanisation has been messy and hidden, Messy urbanisation is reflected in the widespread existence of slums and sprawl. Sprawl, in turn, helps give rise to hidden urbanisation, particularly on the peripheries of major cities, which is not captured by official statistics. Messy and hidden urbanisation according to the report, revealed symptoms of the failure to adequately address constraints that arise from the pressure of urban populations on infrastructure, basic services, land, housing, and the environment. Accordingly, at this stage, policymakers face a choice of continuing on the same path or undertake difficult and appropriate reforms to improve the region's trajectory of development, the latter course not being easy but required and essential in attempting to make the region's cities livable and prosperous.

While there are differences amongst various cities due to a variety of factors, the general pattern of urbanisation has been characterised by high population growth, a dominant emerging problem being the excessive growth of large cities especially metropolitan ones. This pattern is expected to prevail in the future as the basic economic and social forces, which encourage the growth of these cities, continue to dominate. Several times in the past, there has arisen an

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argument for policies to contain urbanisation (especially excessive growth) and thereby the size of cities [Sriraman, 2003, Pp. 5-19]. More specifically, the relevant question that has been (and continues to be) raised is: Is it not possible to restrict growth of cities to an optimum size? The concept of an optimal city is based on comparison of costs and benefits associated with city size (population measured on the horizontal axis). Adopting the common assumption of an S-shaped benefit curve and a U-shaped cost curve, it is expected that net benefits would become zero at some finite city size. Hence, this could indicate the optimal city size [Sriraman, 2013, Pp. 67-106]. The application of this concept has been hardly attempted given the complexities of the issues involved in tracing developments of an urban area to an ideal city size which could perhaps ultimately mean a life for the citizen that is ideal from every aspect of living.

The economic and social benefits of large relative to small cities appear stronger in developing than in developed economies. Furthermore, the social costs probably remain lower in developing countries despite increase in pollution, congestion, etc. Thus, there has been a basis for arguing that the hypothetical critical city size that provides maximum net benefits, if these could be measured, would be greater in developing countries [Richardson, 1977]. The question that arises then would be: how much greater? Global evidence, gathered in a year-long effort by a team led by Tewari [2011] suggested that an extensive, "sprawled" model of urban growthwith cities oriented around the private vehicle rather than people-can have significant economic, social and environmental costs which undermine prosperity. On the other hand, more compact, connected and coordinated cities can be more productive, socially-inclusive, resilient, cleaner and safer, unleashing the benefits of urban agglomeration. A recent study Chatterjee et.al.,

[2015] suggested that small towns have contributed significantly more in generating nonfarm employment while another study by Gibson et.al., [2017, Pp. 413-429] also highlighted the importance of small towns in rural poverty alleviation compared to large cities.

Further, World Bank [2013] had found that most of the urban growth taking place beyond metropolitan areas. It is interesting to note that most of these urban peripheries are not only towns in the vicinity of large metropolitan cities but also rural villages which have grown to acquire characteristics of urban areas. The emergence of market towns is an important feature of these census towns and small towns. But closeness to rural areas has also allowed these small and medium towns to become centres for growth, for demand for new services and goods consumed by the rural population. The close links to the rural and agrarian economy has allowed them to insulate themselves from the uncertainties of large urban cities. But policies that have pushed people and businesses to the suburbs can impose a burden on citizens, especially the poor. Transportation costs between the metropolitan cores and the peripheries are among the highest in the nation. Access to - and the quality of - water, sanitation, and electricity, transport is much worse in the urban periphery than at the core. It is thus important for policy makers to recognise the importance of the emerging economic geographical scenario centered on the peripheral areas of larger cities and small towns and census towns and act accordingly.

It has, however, been recognised that the urbanisation process is very often accompanied by rapid growth in income and employment and that it might not be in the interest of the concerned countries to stop economic growth of cities. Further, it is increasingly being realised that it is impossible to stop or arrest migration into cities even though it may be desirable to do so. It is more likely that it is possible to influence the growth pattern of urban areas in a desirable manner by a reorientation of land-use policies in such a way that the city grows into an organic and vital agglomeration entity.

Historically, land-use planning has been an important component of the urban planning process. However, in the traditional framework of policy making (based on standard economic theory), there are assumptions which no longer hold. Firstly, it is assumed that there is absence of space as a result of which households, firms and governments choose only one location with the result the role of land-use planning has often been underplayed if not overlooked completely. But it is well recognised that space is not only an input in production but it is also an important element for locational planning of economic agents and also an important source of local authorities to finance city development. Land -use decisions invariably introduce strong convexities in consumer preferences and production technologies. Secondly, the essence of urban areas is that there is an agglomeration of many people and firms in close quarters. This introduces an element of non-price competition which complicate operation of the free market process. Further, high densities of population, traffic congestion, provision of public services involve externalities. All these problems suggest that urbanisation issues are complex and that an approach different from the past needs to be adopted to provide meaningful solutions.

It is against this background that we examine, in this paper, the various issues that have been thrown up in India in the past as a result of transformation of economies into urban ones and the challenges that are currently being faced especially in the context of provision of transport services in the course of attempts being made in cities to be made more live able by way of an adequate level of delivered public services which are required to support a good and reasonable quality of life for everyone who resides there. We begin with a brief on the Urban Transformation that is underway in India.

2. THE URBAN TRANSFORMATION IN INDIA

2.1 Urban Areas as Growth Engines

Urbanisation is a form of social and economic transformation from traditional rural societies to modern urban communities. It is a long-term continuous process. It is often claimed that human civilisation has been observed to have been carried forward by cities that have been the seats of power, culture, trade besides being centres of production with historians always considering the Indus Valley civilisation as a typical example of urban one. Many great urban centres such as Pataliputra (Patna), Vaishali, Kaushambi, and Ujjain in ancient times followed by Agra and Shahjahanabad (Delhi) during the medieval times, were identified urban centres in India [Bhagat, 2015, Pp. 7-10]. In modern times too, the transformation in the Indian context has been striking with its urban population recently reaching 420 million in 2015, around 33 percent of the total population. (It may be useful to recall that, presently, an area in India is defined as urban if it has an Urban Local Body or if it satisfies three conditions: (i) More than 5,000 people, (ii) More than 400 people per square kilometer, and (iii) More than 75% of the male (main) workforce is in nonagricultural occupations). This is expected to nearly double by 2050 to 800 million, with close to 400 million additional people living in towns and cities by 2050 (50 percent of total). However, it is argued that this might be an artifact of the way India defines urban areas, and that India would be far more urban if other definitions were used [Denis, et. al., 2012, Pp. 52-62].

In recent decades, urban areas have begun to command more attention in the developmental discourse in India as well as in policy and priority setting. Since the nineties, with Indian cities attaining economic and political importance, vehement claims over resources have been put forth by urban administrations which still functions within an institutional architecture that still largely focuses on the rural as the primary site for developmental intervention [Revi, et.al., 2014]. The increased attention to urban areas has been due to the increasing concentration of people and economic activity in urban areas. According to the UN, we are living in an urban age, with more than half of the world's population living in urban areas since 2008 [UNPF 2007; UNDESA, 2008]. Relative to this, some observers claim that India's urbanisation is relatively slow [Kundu, 2011; GOI, 2008].

It is widely acknowledged that most countries that have achieved high incomes or rapid growth only with substantial urbanisation which has often been quite rapid. In other words, there is a significant relationship between urbanisation and per capita income with many countries becoming at least 50 percent urbanised before reaching middle-income status, and all high - income countries being in the 70-80 per cent urbanised category. One of the traditional ways of understanding urban economies is in understanding the relationship between the process of urbanisation and economic growth. Several cross-country comparisons have been carried out, and one dominant view is that urbanisation is necessary for sustained growth [Spence, et al., 2009]. The JNNURM overview document [GOI, 2005] held that by the year 2011, urban areas in India would contribute about 65 per cent of GDP. It may be recalled that the Central Statistical Organisation (CSO) of India, a Central Government agency estimated that 52 per cent of GDP in 2004-5 was produced by cities. While looking at the proportion of national output being produced in cities, it was estimated that as much as 58 per cent of India's GDP in 2008 was urban [Sankhe, 2010]. Estimation of urban output as a proportion of GDP has also been attempted by Mitra and Mehta [2011, Pp. 171-183] who found that between 59 per cent to 70 per cent of GDP is generated by cities. By 2031, 75 percent of India's national income is expected to come from cities and a majority of new jobs will be created in urban areas.

How does this relationship hold between the States of India? According to Revi et.al., [2014] there was no clear relationship between urbanisation and per capita GDP in 1991. This was largely because Punjab and Haryana were among the richest states in 1991, and were also less urbanised. However, in 2011, there is a clear positive relationship between urbanisation and growth, with the more urbanised states like Maharashtra, Tamil Nadu, Gujarat, and Kerala also having very high levels of per capita income. This has implications for potential divergence between states, if the more urbanised states continue to grow faster than others.

The higher productivity in urban areas is contingent upon the availability and quality of infrastructure services, along with existence of agglomeration as well as urbanisation economies. Urban economic activities are dependent on infrastructure, such as power, telecom, roads, water supply and mass transportation, coupled with civic infrastructure, such as sanitation and solid waste management. For the cities to realise their full potential and become effective engines of growth, it is necessary that focused attention be given to the improvement of infrastructure. The report of the High - Powered Expert Committee on Urban Infrastructure and Services [GOI, 2011a] provided the argument for investment in infrastructure, but points to the additional importance of cities for national development. The Committee was of the view that in the coming decades, the urban sector will play a critical role in the structural transformation of the Indian economy and in sustaining the high rates of economic growth. Ensuring high quality public services is an end in itself, but it will also facilitate the full realisation of India's economic potential. It concluded that India's economic growth momentum cannot be sustained if urbanisation is not actively facilitated.

2.2 Urban Areas Also as Areas of Deprivation and Neglect

At the same time, it has also been felt that deprivations induced by urbanisation have also increased significantly. The National Urban Poverty Reduction Strategy refers to the worsening of urban poverty despite an impressive growth performance over the past few decades, and the shelter and associated infrastructural services' [Mathur, 2009]. Vakulabharanam and Motiram [2012, Pp. 44-52] point to sharply rising urban inequality since the 1980s and 1990s, with 'divergence between urban elites from urban workers as well as the rural population'. They show that interpersonal inequality in urban areas has been steadily increasing in most of the states, and inequality between classes and caste groups has also increased. The responses proposed by government agencies, multilaterals, and scholars have ranged from attempting to attain the goal of slum-free cities [Mathur, 2009], improved access to basic services [Kundu, 2009], provision of rights to land, shelter, and low income housing [Mahadevia, 2006, Pp. 3399-3403], to support the formation of self-help groups with a focus on financial inclusion efforts by the Ministry of Housing and Urban Poverty Alleviation [GOI, 2013a], while, at the same time, attempting to enhancing the revenues through the tax regime which could allow greater support for public expenditure programmes especially targeting the poor with particular emphasis on social safety nets [Jha, 2000, Pp. 921-928].

It is thus observed that while the arguments for a greater focus on cities (largely through improved infrastructure provision) to generate the required high growth rates since they are the growth engines, there has been an emerging view that has been arguing for improvements in access to basic services, low income housing, land rights, social security, and financial inclusion especially with the specific aim of addressing urban poverty and vulnerability of a huge section of the urban population. In other words, it is maintained that urban deprivation (which is increasing as stated above) cannot be addressed if the needs of the urban poor are isolated from the broader challenges of managing urbanisation. Cities, therefore, will have to be both the engines of development while performing an effective role in transformation of lives of those who live there, both quantitatively and qualitatively. That this has not been happening can be understood when we turn and look at one sector in the urban economy, namely, transport (which has been neglected even to support the growth story) which has hardly risen to the challenge of providing proper access to a significant part of the population in our cities, namely, the urban poor [Sriraman, 2013; 2017, Pp. 1-17.6].

3. SIGNIFICANCE OF THE URBAN TRANSPORT PROBLEM IN INDIA (ADAPTED AND REVISED FROM SRIRAMAN (2013)

As cities grow exponentially, an effective and sustainable urban transport system for people and goods movement is a pre-requisite for sustainable economic growth. Many Indian cities especially the metropolitan ones have attracted significant investments in high-technology industries thanks to a competitive and highly qualified workforce. Given this situation, it is well recognised that efficient and reliable urban transport systems are crucial for India to sustain a high growth rate. However, urban transport systems in most cities of the developing world like India are underdeveloped and their transport capacity has been found to be grossly inadequate. Thus, residents are unable to fully exploit economic opportunities and lack the mobility needed to support economic growth.

In most cities, road networks, developed in an unplanned ad hoc fashion (with no or scanty attention to land use planning), and without proper adherence to quality standards, are severely deficient in meeting developmental demand. Residential areas have few and inadequate tertiary or access roads and limited provisions for pedestrians, cyclists, etc. in addition, road networks have missing links, forcing the overuse of existing road sections and lack of circumferential roads resulting in congestion from through traffic. Meanwhile, increases in the number and uses of vehicles surpass the capacity of road space, adding to congestion and air pollution. As a result, transport conditions in cities are characterised by severe congestion and aggravated by the poor discipline among drivers, incoherent enforcement of traffic laws and an eclectic mix of vehicles. A failure to respond promptly to rapid motorisation and the resultant congestion along with weak enforcement of vehicle emission standards, results in degradation of the environment and stunts cities' growth potential.

Rapid urbanisation has also increased the number of urban poor. Efficient systems do contribute to urban economic growth thereby raising incomes and decreasing urban poverty. However, current urban transport systems, which do not fully integrate the specific needs of the poor, have worsened the perverse distributional effects of urbanisation. Overstrained public transport systems restrict urban residents, particularly the urban poor from actively participating in economic activities. The social exclusion engendered by urban transport makes it more difficult for the disabled to access jobs and services. As a result, the poor find it hard to break out of poverty. In addition, the poor are disproportionately exposed to the risks of polluted air. Moreover, the risks they face when they travel are higher than those of the non-poor because of the few safety provisions for pedestrians and cyclists at street crossings and slack

enforcement of pedestrian crossing facilities. There is a definite need for urban transport policies and programs to take the needs of the poor into account.

Poor traffic management, one of the biggest issues in many cities, is a combination of many factors: lack of coordination and overlapping responsibilities among various agencies, insufficient traffic police and traffic signals, flaws in traffic marking, and ineffective enforcement of traffic rules and regulations. Accidents are common due to poor traffic management on the one hand and undisciplined use of the road by many types of vehicles using the roads on the other. Ineffective traffic management is also the result of encroachment by parked vehicles and commercial activity on roads thereby reducing road capacity and causing inadequate public transport services. Good traffic management can not only improve the flow of traffic but can reduce negative environment impact. The need for efficient traffic management systems is therefore acute. Such systems will require (i) an appropriate transport policy framework under which governments can manage travel demand; and (ii) strategic plans that cover junction operations, enforcement, road use, driver re-education, public transport, parking, traffic signals, vehicle restrictions and circulation plan, pavement markings, vehicle condition and equitable allocation of road space.

While a large portion of the urban population relies heavily on public transport for its daily activities, public transport systems in most cities are not adequately developed and investments have been severely limited. Bus and para transit services, the predominant public transport services, are often exclusively operated by the private sector. The unregulated operation of private buses, particularly with regard to the allocation of routes and schedules, has spawned excessive competition, and as a result, the financial performance of public transport and the quality of service have deteriorated, negating the benefits derived in road construction. Improving the efficiency of public transport should not only lower costs but result in a flexible framework which makes public transport more accessible to the poor. To this end, solid institutional and regulatory structures are required that will help create efficient public transport systems that poor users can afford and that gives incentives for proper maintenance, investment and service expansion.

Governments' weak capacities lead to low institutional coordination and an inefficient institutional framework. Government agencies have overlapping or poorly delineated responsibilities, planning and programming are chronically fragmented and largely ad hoc, and institutional arrangements for policy implementation are usually incoherent. Rapidly increasing urban populations require efficient use of limited land resources to support economic growth; however, planning for land-use, urban development and transport management loosely integrated, thereby constraining cities' growth potential, competitiveness and efficiency.

Private sector involvement in urban transport has generally been limited to the provision of public transport services, including buses and taxis, autorickshaws, etc. Despite growing recognition of the burden that investments in major roads, etc. place on municipal budgets, private sector participation in maintenance and construction is limited. Public mass transit systems require substantial investment and careful commercial management to ensure their financial viability for which private sector participation is crucial particularly in big cities. Planning and regulatory arrangements for private participation in urban transport must therefore be established.

Experience indicates that piecemeal approaches to sustainable urban transport development are likely to fail and that capital investments needed to be supported by policy, legal, regulatory and institutional reforms. More policy attention must be focused on building capacity in urban transport administration, on enhancing the role and quality of affordable public transport, on financing mechanisms, and on needs of pedestrians and users of non-motorised transport.

Over the last two decades, rapid population growth and spatial expansion has led to a sharp increase in demand for urban transport facilities and services in many cities in India. Although circumstances are different across cities in India, certain basic trends which determine transport demand (such as substantial increase in urban population, household incomes, industrial and commercial activities) are the same. These changes have exacerbated the demand for transport - a demand that most Indian cities have been unable to meet. Several factors have hindered the adequate and timely provision of services to match the ever-increasing demand. In many cities, densification and spatial expansion have occurred with little or no development planning. while in some cases the failure of the instruments of governance has resulted in a significant wastage of resources or substandard quality of infrastructure. Furthermore, the huge capital costs and time required to develop high capacity transit systems have prevented the timely implementation of such systems in rapidly growing urban areas. As a result, many cities have relied on road-based systems, which have serious capacity constraints, negative environmental consequences and other limitations. A worrying factor is that car ownership in Indian cities is still low (compared to developed economies). The rising incomes especially in our urban areas provide attraction and an opportunity to the urban dweller to own a vehicle especially when public transport has failed miserably in its attempt to meet the demand in most cities. Urban transport systems in most cities suffer from major constraints as insufficient financial resources, inefficient regulatory frameworks, poor allocation of road space, inadequate traffic management systems, institutional weaknesses and undeveloped public transport systems.

In most cities, road networks, developed in an unplanned ad hoc fashion, and without proper adherence to quality standards, are severely deficient in meeting developmental demand. Residential areas have few and inadequate tertiary or access roads and limited provisions for pedestrians, cyclists, etc. in addition, road networks have missing links, forcing the overuse of existing road sections and lack of circumferential roads resulting in congestion from through traffic. Meanwhile, increases in the number and uses of vehicles surpass the capacity of road space, adding to congestion and air pollution. As a result, transport conditions in cities are characterised by severe congestion and aggravated by the poor discipline among drivers, incoherent enforcement of traffic laws and an eclectic mix of vehicles. A failure to respond promptly to rapid motorisation and the resultant congestion along with weak enforcement of vehicle emission standards, results in degradation of the environment and stunts cities' growth potential. The impacts of transport on the quality of urban life go further than that. As India experiences a period of economic and urban growth, air pollution in its major cities has become a cause of national concern and generated worldwide attention.

Major cities are continuously facing the challenges of air pollution which blanket it from time to time. Air pollution is often caused by a lack of policy and forecasting in transportation, industries, energy use, and waste generation. The polluted air is known to affect large populations throughout the world. According to a World Health Organisation (WHO) report, more than seven million people die prematurely due to air pollution each year. India has one of the highest numbers of people affected due to air pollution in the world. The rapid increase in population and its unsustainable policies had made cities in India amongst the most polluted in the world. It is imperative to know that a healthy body can be more productive and be an asset to society and the economy [Dwivedi, et.al., 2018].

As manufacturing and power sectors are progressively cleaned up, the relative importance of the urban transport sector to air pollution increases. There has been much current discussion about the development of Mumbai as a "world class city" rivaling Shanghai. For the Indian cities to retain their attractiveness to international capital, and to compete with other international centers, they must be livable. The environment is important to the economic health of the cities as well as the medical health [World Bank, 2002]. Along with the growth-related impacts of urban transport are the direct impacts of urban transport on the life of the poor. The worst off in urban transport may be the pedestrians, whose mobility and safety are hindered by non-existent, broken-down, and/ or obstructed sidewalks, difficult street crossings; and flooding in monsoon seasons. The bicycle riders, once a major urban transport mode in India, are gradually being pushed off busy roads by motor vehicles. These two groups account for half of all traffic fatalities. Secondary and tertiary road networks have received almost no attention or funding. especially in low-income areas. A significant issue is the lack of coordination between various agencies administering the various facilities.

Currently, these systems also rarely integrate social concerns and the specific needs of vulnerable groups, thereby rendering such systems ineffective in relation to poverty reduction. Drastic increase in the number of vehicles have strained our urban road networks, resulting in congestion for most of the day. Most of these factors disproportionately affect the urban poor in terms of limited accessibility to affordable transport services, ill-health from pollution and road safety concerns. Efficient systems can contribute to urban economic growth thereby raising incomes and decreasing urban poverty. However, current urban transport systems, which do not fully integrate the specific needs of the poor, have worsened the perverse distributional effects of urbanisation. Overstrained public transport systems restrict urban residents, particularly the urban poor from actively participating in economic activities. The social exclusion engendered by urban transport makes it more difficult for the disabled to access jobs and services. As a result, the poor find it hard to break out of poverty. In addition, the poor are disproportionately exposed to the risks of polluted air. Moreover, the risks they face when they travel are higher than those of the non-poor because of the few safety provisions for pedestrians and cyclists at street crossings and slack enforcement of pedestrian crossing facilities. Poor traffic management, one of the biggest issues in many cities, is a combination of many factors: lack of coordination and overlapping responsibilities among various agencies, insufficient traffic police and traffic signals, flaws in traffic marking, and ineffective enforcement of traffic rules and regulations. Accidents are common due to poor traffic management on the one hand and undisciplined use of the road by many types of vehicles using the roads on the other. Ineffective traffic management is also the result of encroachment by parked vehicles and commercial activity on roads thereby reducing road capacity and causing inadequate public transport services. While a large portion of the urban population relies heavily on public transport for its daily activities, public transport systems in most cities are not adequately developed and investments have been severely limited. Bus and para transit services, the predominant public transport services, are in most cities often exclusively operated by the private sector. The unregulated operation of private buses, particularly with regard to the allocation of routes and schedules, has spawned excessive competition,

and as a result, the financial performance of public

transport and the quality of service have deteriorated, negating the benefits derived in road construction.

Governments' weak capacities have led to low institutional coordination and an inefficient institutional framework. Government agencies have overlapping or poorly delineated responsibilities, planning and programming are chronically fragmented and largely ad hoc, and arrangements institutional for policy implementation are usually incoherent. Experience indicates that piecemeal approaches to sustainable urban transport development have failed and that capital investments needed to be supported by policy, legal, regulatory and institutional reforms.

4. MAJOR POLICY RESPONSES IN THE RECENT DECADES - A CRITIQUE

4.1 Infrastructure Growth Policies for Urban Areas

In 2005, the Government of India while emphasising the importance of the urban sector for the Indian economy launched a major initiative in the form of the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) with the objective of improving and augmenting the economic and social infrastructure of cities, and providing affordable housing and also basic services to the urban poor. The Mission's basic objective was very clear when it stated the importance of cities for economic growth as a rationale for investing in infrastructure [GOI, 2005]. This was the single largest initiative since Independence to finance infrastructure and service provision in Indian cities while, at the same time, attempting to bring about governance reforms in cities by way of greater decentralisation. An important aspect of this programme was also the imposition of conditionalities on the States to avail of the funding which marked a paradigm shift in the manner in which urban policy was traditionally conceived. The Mission ran its course from December 2005 to March 2014. Ahluwalia [2015] has documented some case studies to show how Indian cities in some sectors were able to transform the state of service delivery under the Mission within a short period which was possible only when some state governments provided an enabling environment for reform and innovation at the city government level, and where there was capacity to plan, implement and manage projects (sometimes because of the presence of a strong municipal cadre) and where city finances were relatively strong. But generally, at the sectoral level, the performance has been inadequate. Citing the transport sector, Sriraman [2013] while observing that there were some success stories especially in regard to PPPs, there were also many ventures under this framework which failed.

While the overall JNNURM reforms had targeted all urban infrastructure sectors, the transport sector had hogged about quarter of the JNNURM funds. Even though about 30 states and union territories qualified for the JNNURM funds, transport sector funding was allocated majorly to Delhi, with mega cities bagging the maximum numbers of projects. For getting approval for transport projects, the guidelines recommend that the transport infrastructure improvement schemes should be in compliance with the NUTP (National Urban Transport Policy, GOI [2006]) that had laid down the guiding principle for sustainable mobility with clear thrust on public transport, non-motorised transport, and transit -oriented development. The project analysis, however, showed that the identified and approved projects were not in line with the spirit of the NUTP. The actual spending was focussed on automobile centric infrastructure. In JNNURM, under transport sector funding, the roads and flyovers category dominated with as much as 70 per cent of the total number of projects and 15 per cent were mass-transit projects. By attempting to promote public transport, though cities came up with concepts to support new

public transport facilities such as Bus Rapid Transit (BRT), more capital intensive and railbased systems like Metro, Light Rail Transit (LRT) and monorail were also encouraged. Also, while BRT, bicycle-inclusive and pedestrian plans were approved, in principle, by the Central Government, the implementations plans were few with the consequence that much less space resulted for pedestrians and cyclists. This was despite the fact that nearly 50 per cent trips are made on foot, by bicycle, or by intermediate public transport systems in Indian cities. [LASA, 2006]

The mandatory reforms enlisted and envisaged under JNNURM scheme required city development plans to be prepared (in 2005) and stated certain mandatory and optional reforms but they did not mention any reforms for urban transport though NUTP talked about them extensively. For example, most cities/ urban areas have hardly taken concrete steps to reform the transport sector structure as a basis for the development of even a viable mass transit industry. Consider, for example, in the context of initiatives taken to promote bus transport under the JNNURM, while incentives were provided, very few attempts were made to insist on tariff reforms which were badly required as far as many bus systems were concentrated especially in the public sector (which still had a decent presence) given the emerging non-viability and therefore of sustainability of most of these systems. Moreover, mere efforts on recovery of costs through a process of implicit subsidies (price discrimination) were inadequate as a measure. This approach needed to be supplemented by effective benchmarking norms for provision of explicit subsidies - a need that arises in the case of almost all urban transit systems.

Given a federal framework, central government-driven missions of the JNNURM type was expected to act as a catalyst for pushing the states and urban local governments which had the necessary jurisdiction and thereby powers to act effectively. A key element proposed in the process was the active involvement of the private sector in provision of relevant services with the public bodies being active in helping the private parties in the formation of PPPs (Public - Private Partnerships) for effective service delivery. It was observed that the local governments faced serious legal and capacity constraints on forming such partnerships with the private sector. According to the policy document, "the Central Government would encourage the State Governments to involve the private sector in providing public transport services, but under well- structured procurement contracts" [GOI, 2006, p. 19]. The initiatives taken under the JNNURM in this regard were found to have been not even halfhearted with governments (States and local) considering the venture as something beyond its monitoring and control (except for the start-up process) and the larger public considering it as purely private activity [Sriraman, 2013].

Some of these findings were thought to have important implications for the success or otherwise of the new National Missions for urban development announced by the Government of India since 2014 which were, to some extent based on the guidelines provided by a High-Powered Expert Committee [GOI, 2011a] set up by the Ministry of Urban Development (MoUD), Government of India. This Committee estimated the investment requirement to bridge the deficit in urban infrastructure as Rs. 39.2 lakh crore at 2009-10 prices, which was further estimated to be equivalent to Rs. 54.3 lakh crore at 2014-15 prices, not including the cost of land. The estimates covered the period from 2012 to 2031(assuming average growth of GDP at 8 per cent per annum) for delivering services to the entire urban population including that which was not served earlier and the additional population that was expected to be served.

In June 2015, the Government of India announced two other major National Missions: The Smart Cities Mission (SCM) [GOI, 2015a] and Atal Mission for Rejuvenation and Urban Transformation (AMRUT) [GOI, 2015b]. The Smart Cities Mission was an ambitious mission aiming at enhancing the quality of urban life and providing a clean and sustainable environment to 100 selected cities with smart solutions. It was supposed to be in alignment with a worldwide trend in favour of "smart cities" although there has not been a, as yet, a precise definition of what constitutes a smart city. The Smart Cities Mission was expected to cover 100 cities (which were to be competitively selected) during the five-year period from 2015-16 to 2019-2020 and the Government of India committed Rs 48,000 crore to the Mission. The Mission would opt for retrofitting and/or redevelopment of certain pockets of existing cities (area-based development), and would also develop greenfield smart cities. Intelligent transport solutions with city-wide impact were also on the agenda. Special Purpose Vehicles were to be set up to drive the Smart Cities Mission unlike AMRUT which was to be managed by urban local governments. AMRUT is, in a sense, the successor to JNNURM. It was expected to cover 500 cities and focuses on infrastructure for water, sewerage, drainage, transport and green spaces and was effectively a centrally sponsored scheme with a total outlay of Rs. 50,000 crores over a 5-year period. Like the JNNURM, disbursements were expected to be linked to a set of reforms.

4.2 Inclusive Growth of Urban areas: A Digression

During the last decade, the concept of inclusive growth has gained prominence with notions of inclusion implying not only social integration and cohesion, but also enabling all the stakeholders to make the best of the opportunities offered as well as participate actively in decision-making. While concerns about inequality and inclusiveness are not new, the rapid growth experience in some developing countries during the 1980s and 1990s was accompanied by rising inequality, which then led to concerns about redistribution and inclusiveness re-entering the political and policy discourse in the 2000s. Indian policy makers over the past decade have repeatedly referred to inclusive growth as an important goal-both the XIth and the XIIth Five Year Plans show a focus on inclusive growth and strategies to achieve it [GOI, 2008; 2011b; 2013b] However, there has been very little clarity on how inclusive growth is to be defined, with government documents, international institutions, and researchers offering a wide range of notions as to what constitutes inclusive growth [Suryanarayana, 2008, Pp. 93-101]. One mild version could be that inclusive growth should be one that is poverty reducing, or in other words, the poor benefit from growth. Most assessments of inclusive growth have focused only on the consumption aspect, and not on the participation and income generation aspect of inclusion. Whereas the former can be achieved through an emphasis on redistributive schemes such as cash transfers and social protection schemes, the latter would require greater emphasis on employment generation, good accessibility to basic services and an enabling overall macroeconomic framework.

The interdependence and inter-linkages among Indian cities (especially the major ones) together with their regional hinterlands and inter-urban corridors are now being envisaged as having the potential to transform India into a global economic power. However, these cities have severe limitations as they face huge challenges. The regional inequality, rural-urban divide and intra-city disparities are the strong barriers to India's urban transformation and economic progress. Accordingly, a proper, well thought out urban development strategy is required to be in place. The question is: Where do the Smart Cities Mission and AMRUT fit into this strategy of India's larger urban development trajectory? Also, what is required to orient the Cities Missions such that it addresses India's pressing urban sector challenges and enables different stakeholders to look at each with consistent objectives, in order to attain a common goal? [Bhattacharya and Rathi, 2015]. It is in context that the concept and strategies of the Smart City and AMRUT Missions need to be viewed.

4.3 Some Hopes and Many Apprehensions

In spite of the sorry state of affairs that has been described, during the past decade or so, many of India's cities have introduced innovative measures in urban planning, management and governance, thereby, clearly demonstrating a reasonably well-articulated vision which has proposed creativity and a departure from the business as usual scenario. Improvements in public transport based on innovative planning and the use of modern technology is seen. Delhi has pioneered the use of Compressed Natural Gas, a low-polluting fuel, for all modes of public transport, while Ahmedabad has been operating an extremely successful Bus Rapid Transit system for quite some time now. Disaster risk management plans are being developed, institutionalised and implemented by some cities to protect their areas and residents from natural and man-made disasters. Equally important to note are efforts being made to revitalise of older areas within cities such as Ahmedabad, Jaipur, Pondicherry and Varanasi. The present nuances of the smart city concept have to be seen in this context and that of the forces of globalisation and the huge expansion of information technology that are expected to shape our cities and influence our lives.

Cities are complex systems which touch multiple agencies, departments and organisations. These have become too complex to handle and operationalise conventionally. New ways, systematic changes, and technology can enhance their efficiency, services and operations. A Smart City aims to drive economic growth and improve the quality of life of people by enabling local area development and harnessing technology that leads to Smart outcomes. The objective of the Smart Cities Mission of the Ministry of Urban Development is to promote cities that provide core infrastructure and give a decent quality of life to its citizens, a clean and sustainable environment and application of 'Smart' solutions for inclusive development. The concept and strategies of the smart city will be expected to continue to be an evolving one. The Mission did not provide any definition of the smart city but aims to harness the potential of the city which aspires to become smart through smart solutions. Smart solutions include e-governance and electronic service delivery, video crime monitoring. smart meters for water supply management, smart parking and intelligent traffic management to mention only a few. Application of smart solutions is expected to enable cities to use technolinformation and data to improve ogy. infrastructure and services. It will also endeavor area-based development through retrofitting (city improvement) and redevelopment (city renewal). In addition, new areas/greenfield (city extension) will be developed around the city to accommodate growing urban population. Integration of major systems on a common network helps optimise use assignment and space configurations, eliminating unused or underperforming space. It is envisaged that the strategies for the development of a smart city will create enough jobs and take care of the poor. Thus, it is conceived that the smart cities would be inclusive.

There are many smart cities that have been proposed and adopted for the less urbanised areas of central, eastern and northeastern India. AMRUT also proposed to cover 500 urban centres out of the 4041 statutory cities and towns in the first instance. However, there are a large number of Census Towns which were not covered by either of the two programmes. Census Towns are mostly governed by Village Panchayats, which lack resources and institutional capacity but can serve to act as a bridge between rural and urban areas. Also, inclusion of Census towns in the urban development strategy can lead to unleash the potential of urbanisation for rural development. This way, one would not lose sight of inclusiveness in a way that smart cities can help bridge the intra-urban gap as well as the ruralurban divide. The mandate of the AMRUT confines to water supply, sewerage and seepage management, storm water drainage, urban transport and development of green spaces and parks including capacity building and reform implementation by the Urban Local Bodies (ULBs). It is envisaged that funding under AMRUT will give first preference to the potential smart cities.

In a critique of framework of the SCM, Bhattacharya and Rathi [2015] held that smart cities are largely being projected as an epitome of India's educated citizens' aspirations and that it is feared that it could lead to non-inclusive development. Further, it was pointed out that opportunities for marginalised groups were not expected to be created in such an urban environment as it may not yield economic returns, leading to further exclusion. The focus being on technology implementation, smart cities could be oriented towards heavily instrumented and automated systems. Any new programme or scheme proposed by the Central government should be in consonance with the fact that are as yet problems such as lack of capacity in smaller cities to implement sophisticated urban development programmes. [Kundu, 2014] Studies have indicated that involvement of higher levels of government increasingly affect the process of empowerment of local bodies Accordingly, it was strongly felt that there needs to be a shift from projects / schemes aiming only to create new assets with projects spanning across the following categories such as improvement of existing infrastructure, creating new infrastructure, changing processes and attempting to impact behavioural aspects of a major shareholder such as the citizens. Moreover, there has also emerged the perception that the role of ULBs in programme design and operationalisation is limited. In this context, it is necessary to look at the critique by Awasthy et.al., [2017]. The Smart Cities Mission also necessitated that each city creates a Special Purpose Vehicle under the Companies Act 2013, which is a limited company which will manage the implementation of the projects under the Mission. The SCM Guidelines and the Certificates of Incorporation of the SPV state that the 'rights and obligations' of the local municipality be transferred to the SPV. This is a problematic statement as the exact terms of the relationship and hierarchy between the SPV and the municipality is unknown. This ambiguity will be detrimental to collaborative efforts between SPVs and municipalities and to democratic processes. The SPVs must have a majority state share between central and state government, the remainder could be held by municipal government or the private sector. At this point no more than 40% of shareholdings can be held by a private party. In practice however, the 35 cities had only one private individual hired and there was no private ownership in the SPVs. In fact, the primary powerhouse in the SPVs were bureaucrats from the state government with only a small representation of political leadership in the SPVs. The SCM has a substantive city-budget and the decision making. Given that each city has a substantive SCM budget (relative to their own budget) the fact that much of the decision-making is being entrusted with bureaucrats and state government representatives and not elected officials is a clear movement away from the 74th amendment and the push to enhance decentralisation. This is an important point because much of the legitimacy of the Mission comes from the fact that it positions itself as a movement towards empowering local governments. It is interesting to note that of the various urban development Missions the federal government has launched, only the Smart Cities

Mission necessitates the creation of an SPV that could rival the municipality. Had there been multiple SPVs for the multiple Missions, the power of the SCM SPVs might have been diffused and diminished the potential incursion into democratic governance.

In regard to the transport sector, in keeping up with the Smart City guidelines, the focus is primarily on Area Based Development as 71.6% of transportation projects are area-based projects. The IT component in this sector is higher than the average of the Mission at almost 30%, due to the focus on traffic systems and information systems in public transit. The rest of public transit focuses on BRT systems, hard infrastructure and communication systems. The Mission focuses 13% of the budget on non-motorised transportation, the rest is largely devoted to supporting motorised transportation systems. Given that one of the purposes of the Smart Cities Mission is enhancing sustainability, this particular project is better suited for owners of private transportation which seems to be in conflict with the goal of sustainability.

SK Khanna [2018], in his appraisal, examined the progress and noted that within 3 years of the implementation of this ambitious scheme, only 5.2 percent of the total identified projects had been completed with 1.4 percent of the total envisaged investment of Rs.1,35,958 crore. Of the 2,854 identified projects, 148 projects were completed. Work on another 407, accounting for about 14% of the total investment envisaged under the mission, had just started and about 72% of the identified projects were still at the preparatory stage. Overall, most of the cities had hardly spent the money given to them by the government with a major portion of funds still lying idle with the state governments. He pointed out to serious execution and implementation fault-lines in the case of a number of cities across the country vying with each other to climb onto the smart bandwagon without adequate preparation to upgrade their capability to manage the process.

In fact, the Twenty Second Report of the Standing Committee on Urban Development (2017-18) [Lok Sabha Secretariat, 2018] had also showed that since the mission's launch in 2015, just Rs 182 crore (\$28 million) has been utilised from the Rs 9,943.22 crore (\$1.5 billion) released--amounting to 1.8%. JNNURM had similarly suffered shortfalls in implementation and fund utilisation, largely due to a lack of capacity at the local administration level. From 2005 to 2014, just 37% of urban infrastructure projects and 52% of basic urban services projects were completed under JNNURM. Rs 54 crore (\$8.9 million) had remained unspent by the end of the programme. A report released by the Comptroller & Auditor General [CAG, 2012] in November 2012 reviewing JNNURM performance had pointed to poor project management, recruitment challenges and difficulty in doing business at the municipal level. States and union territories had been requested to set up state level nodal agencies to manage project execution and build project implementation units. However, the CAG report found that 10 states had not established these, and in several states' vacancies had remained unfilled. Similarly, special purpose vehicles, tasked with appraising and releasing funds, as well as managing smart city project implementation, were equally slow to begin operation.

More specifically, most of the problems in implementation have risen at the municipal and urban local bodies (ULB) levels that have always been constrained due to lack of sufficient funds, expertise and skilled manpower. To tackle funding problems, the SCM has provided for exploration of new revenue models for funding well designed and well managed infrastructure. This could be by way of raising money through municipal bonds. But given the persistent and continuing problem of unspent allocation for the mission's activities at the cities' level reflects a deep crisis concerning the lack of skill and capability of states and local bodies which if they are to be upgraded takes time to mature and is possible through innovative administrative and local reforms.

5. FUTURISTIC CHALLENGES

Harris [2002] noted that increasing globalisation and the resulting decentralisation had raised the importance of city level planners in economic management while remarking that that the 'old saying -that economic growth is a matter exclusively for national governments-is no longer tenable. But at same time it has also been argued that fiscal federalism theory clearly allocates redistribution functions to higher tiers of government [Mathur, 2009], and therefore functions such as poverty alleviation are assigned to state and central governments. Even today, Indian city governments have few policy measures under their control to effectively address the issues that city's economic development strategies since it is well known that these are largely determined by state governments. While it is true to say that the current arrangements regarding control of financial resources needs to be altered by giving the local governments more powers to raise funds for running a city, there is no doubt that there are also other challenges that need to be handled at the city level, mostly in respect of existing governance practices which are far from being effective in ensuring effective administrative practices. We turn to these now with a focus on the urban transport scenario beginning with issue of resources.

One aspect that is overlooked and missing in the urban transport context in India and which is a characteristic feature of many urban transport systems across the world relates to a dedicated fund that needs to be made available for the purpose. According to World Bank [2005], the problem of under- funding is an inherent one due to the overlong agency chain involved in what is paid by local road users and the funds brought back to bear on the local transport system. There are several ways to do this. The most common way is to partially escape from budget funding and create a closed loop from road user fees via dedicated funds to cities. A less common way, highly successful where it has been implemented, is to introduce local road charging systems, aiming for both revenue generation as well as demand management. Either way, the challenge is to create not merely urban road funds, but urban transport funds. The available information technology will enable this transition to a smooth and guaranteed source of funds. Moreover, the private sector funding has a potential to be a complement, but the prime source of funds should be public which should enable a crowding in of local private capital [Sriraman, 2017].

Traditionally, the approach has been supplyoriented, and traffic growth-biased and continues to be so. The resulting policy orientations and decisions on how to spend available funds have left large economic and spatial segments poorly served, and have not been as effective as they could have to make these cities competitive. In the short- term, it neglects the mobility of lowincome and poor travelers, especially the nonmotorised ones. It does not involve any use of traffic restraint tools and hence leaves street-based public transport services (the work horse of the transport system) to the mercy of unrestrained competition from individual motor vehicles. Moreover, it favors the most capitalintensive public transport modes (metros and other urban railways) which may not be warranted by either traffic density and passengers' ability to pay, or their budget capacity to pay subsidies in perpetuity. In the longer term, the emphasis on increasing road capacity encourages car-based urban development patterns. The actual policies, as opposed to the statements in principle, thus appear to be both socially regressive, and financially unsustainable. There is a conflict with the guidelines enunciated in the urban transport policy statement in a number of ways. In the short term, it neglects the mobility of low-income and poor travelers, especially the non-motorised ones.

A common problem is fragmented responsibility for transportation between many agencies. Reflecting the state/local split, no city has vested the prime responsibility for all aspects of urban/metropolitan transport in one institution. Pieces of decision authority, control over resources and accountability are spread widely between state governments, local governments, and state and national para-statals. It is readily acknowledged that some fragmentation is both necessary and unavoidable. But, at any given level of fragmentation, there should be stable umbrella arrangements to coordinate various institutions. This tends to encourage a sectoral approach to planning. Plans are prepared with different financing and implementation arrangements and lack effective institutional mechanisms to examine their mutual compatibility or interrelationships. Because of this unarticulated approach, urban transport development in many cities confronts serious difficulties, including delays in project implementation, wasteful investment, and so on, and in many cases transport interventions do not produce the desired effect. The presence of a unified metropolitan transport authority (UMTA) could solve many of these issues. But progress has been tardy and in cases the authority has been set up such as Delhi, Bangalore, Mumbai, it has been established by an executive order except in Hyderabad where it has been constituted under a special enactment. All UMTA's are essentially recommendatory and coordination bodies - not implementing agencies. But they could be expected to be excellent platforms for coordinated thinking and planning, if properly handled.

The presence and growth of the spillover effects from the urban economies justifies a reconsideration of the present role of the central

government in urban transport which is still confined to a few dimensions. Under the current decentralised arrangements, the state and governments take municipal primary responsibilities-both functional and fiscal-for urban infrastructure, including urban transport. Central monitoring and supervision is limited at the local level where planning and policy implementation is carried out. To a great extent, this situation has created an institutional gap in addressing the spillover effects of urban transport problems which is also reflected in the slow transfer of powers and resources from states to local governments. Further, the political constituencies of state and local institutions being different, the continuing dominance by the state produces transport policies and investments are not properly aligned with local interests. Equally significant is the problem of proliferation of state and local institutions and parastatals which has been unusually high, resulting in diluted regulatory and funding authority, and accountability for urban transport matters. Cities have not developed capacity for public transport regulation. The policy framework must provide specific guidelines on the institutional mechanism that is required for regulatory purposes especially when the paradigm of development of infrastructure and services is no longer the same as in the past.

6. CONCLUDING REMARKS

A major problem in bringing about any change in Indian cities is the capacity of institutions and individuals is to adapt to change while managing it effectively. But it needs to be recognised that basic infrastructure provision needs to be in place for new technologies and new ways of functioning to be used. But even if new technologies are in place, there are challenges which include merging technology with law enforcement. For example, there is no point having high tech traffic signals if their installation does not result in traffic discipline and system implementation cannot be enforced.

Moreover, governance can be improved only when providing such knowledge and skills to the city functionaries evolves as a regular and an on-going activity. But it is important to recognise that citizens are major stakeholders and only their effective participation in the decisions is central to the success of managing any city. Thus, the administration must provide for citizen participation. Only this can make citizens feel that they own the city and be a part of its decision making. At the same time, citizens need to realise that they, as users, are need to make sure that operation and maintenance of the infrastructure and services is carried out well. Their behavior needs to be ensured by enforcement of laws and regulations. In this process technology can empower citizens with information that is useful and usable. India is a vast country and diverse in terms of geography, culture and levels of development. The diversity of the country needs to be taken into account while planning smart cities. Many models may need to be developed to suit the diversity. In India's quest for Smart cities, examples have been cited of Singapore, Vienna (Austria), Songdo (Korea), Barcelona (Spain), to name a few. While India can look at the developed nations for inspiration, it must find its own solutions to make cities technologically advanced and make them function well. Sustainable development and sustainable solutions should be the ultimate goal of developing smart cities.

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