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CONTEMPORARY CONCERNS STUDY

Impact of Government Schemes on Indian Economy

CCS Guide: Prof. Rupa Chanda

Prepared By

Sandeep N (1511051)

Vivek T (1511068)

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MGNREGA

1 Introduction

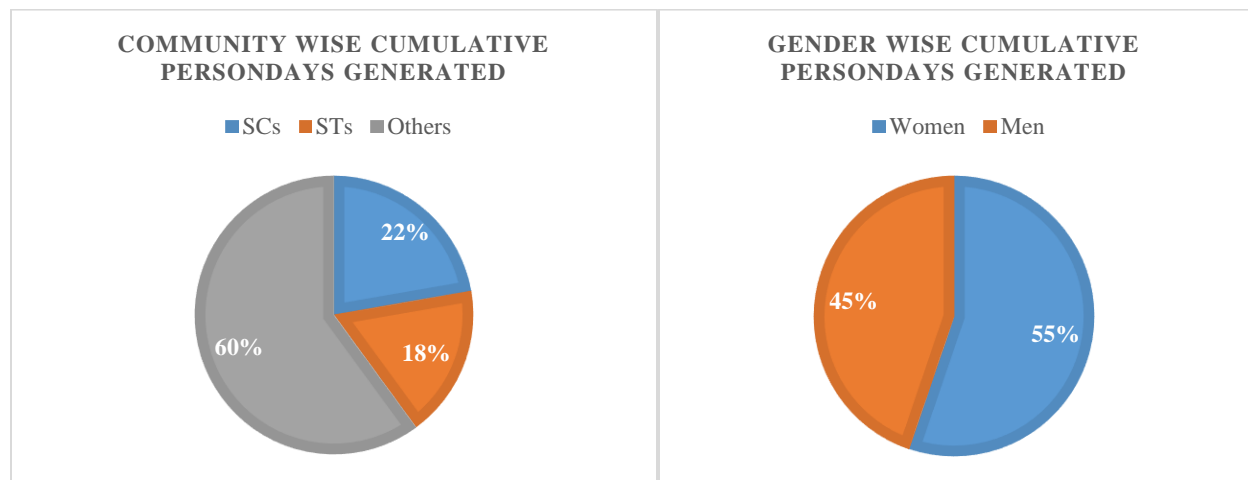
The objective of MGNREGA, according to Ministry of Rural Development, is to enhance the livelihood of rural people by guaranteeing 100 days of work in a financial year [1].

As of 2016, the scheme has been implemented in 661 districts (6,858 blocks) across India. So far, about 27.84 Cr people have been employed through NREGA, of which only about 10.72 Cr people (~39%) are still actively employed [1]. The budget allocated to NREGA scheme was decreasing till FY15 because of lack of funds, change in government and the corresponding effect can be seen in the number of person-days generated in a year. With the financial boost to NREGA from FY16, the number of person-days generated in a year has started increasing from FY16. Although the scheme has promised to generate 100 days of work per person, in the last 4 years the average days of employment were around 45-50 days. It has been observed that the ST households have a higher average employment in comparison to the overall average employment. The total work taken up through NREGA is about 100-120

Lakh in a year of which about 20% gets completed fully in a year. In the line with the labor budget, the wages have also varied similarly in the last 4 years. The wages of the unskilled labor constitute about 75% of the total wages paid. The top 6 states with high person days created in listed in the table below.

State	Cumulative Person-days generated (FY 16)
Tamil Nadu	36.87 Cr
West Bengal	28.66 Cr
Rajasthan	23.41 Cr
Andhra Pradesh	19.83 Cr
Uttar Pradesh	18.31 Cr
Telangana	14.09 Cr

Source: <http://nrega.nic.in>



Source: <http://nrega.nic.in>

Based on the cumulative person-days generated in a year, SCs and STs have accounted for 40% of the total person-days generated. Similarly, women have been given higher priority in the allocation of work through NREGA. The following table indicates the performance of the state as a percentage of completed projects in FY 2015-16.

Top 7 States (% of Work Completion)	
MIZORAM	98%
TRIPURA	78%
KERALA	75%
MANIPUR	70%
PUDUCHERRY	66%
TAMIL NADU	62%
GOA	57%

Bottom 7 States (% of Work Completion)	
ASSAM	1%
RAJASTHAN	4%
ANDHRA PRADESH	4%
MEGHALAYA	6%
ARUNACHAL PRADESH	7%
SIKKIM	10%
BIHAR	12%

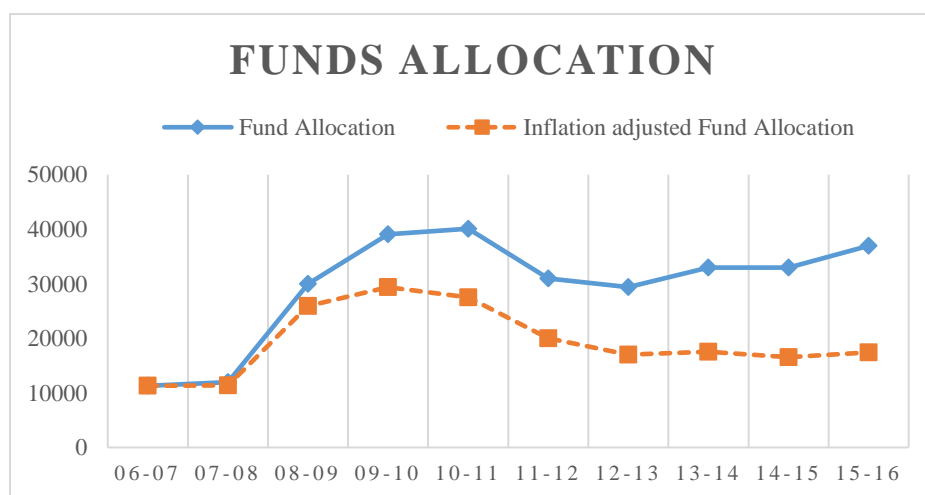
Source: <http://nrega.nic.in>

2 NREGA Expenditure

2.1 Funds Allocation

After the NREGA Act was passed by the parliament in 2005, the allocation of the funds for the project started in 2006. The entire salary of the unskilled workers, 75% wages of the skilled and semi-skilled workers and 75% of the material expenses are spent by the Central Government. Rest all the expenses are taken care by the respective state governments. Starting with a funding of Rs. 11,300 Cr in 2006, the scheme received Rs. 36,967 Cr in 2015 with the maximum fund allocation of Rs. 40,100 Cr in 2010.

After FY 2010-11, the quantum of the funds allocated to the scheme dwindled and fund allocation started increasing from 2012 in nominal terms. Whereas in real terms (in terms of 2006-07 prices), from FY 2009-10, the funds allocated in real terms have gone down and stayed almost in the range of about Rs. 17,000 Cr.



Source: Ministry of Finance

The following table shows the expenditure across various work categories. It indicates that rural connectivity and water conservation projects are the major projects taken up in NREGA.

Work Category	Exp (In Lakhs)	
	FY 2012-13	FY 2015-16
Rural Connectivity	1223722	1146603
Water Conservation and Water Harvesting	755334	594051
Renovation of traditional water bodies	486082	527001
Works on Individuals Land (Category IV)	242880	496390
Land Development	289417	411355
Drought Proofing	253977	259959
Micro Irrigation Works	213351	251616
Flood Control and Protection	177626	170810
Bharat Nirman Rajeev Gandhi Sewa Kendra	75542	128792
Other Works	70048	81853
Rural Sanitation	11524	74523
Anganwadi	0	17418
Fisheries	1974	10192
Rural Drinking Water	579	5659
Play Ground	0	4162
Food Grain	0	3911
Coastal Areas	8	166

Source: <http://nrega.nic.in>

The state-wise allocation of funds and expenditure for the last 3 years is shown in the Appendix.

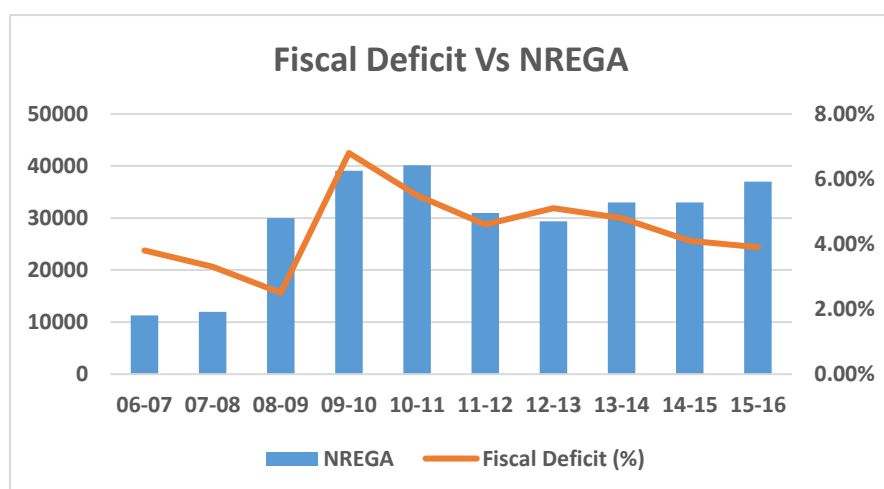
Year	2013-14	2014-15	2015-16
# states with negative balances in NREGA Account	8	10	22

The above table indicates that the number of states with the negative balance in NREGA is increasing year-on-year for the last 3 years, despite the increase in fund allocation in the last 3 years [2].

2.2 Effect on Fiscal Deficit

The above graph shows the allocation of funds to NREGA along with the fiscal deficit for the last 10 years. From the graph, it is obvious that the funds allocated to NREGA had an impact on the fiscal deficit of the country.

Also, **the correlation between NREGA fund allocation and fiscal deficit is 0.685**. This further

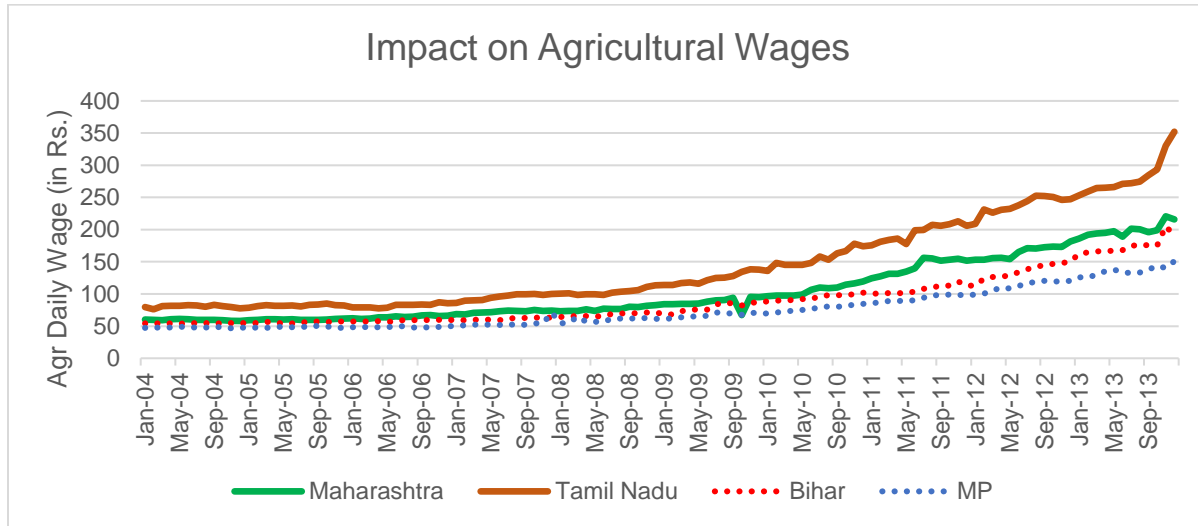


Source: <http://nrega.nic.in>, Ministry of Finance

illustrates the fact that there is some weak relationship between the NREGA fund allocation and fiscal deficit.

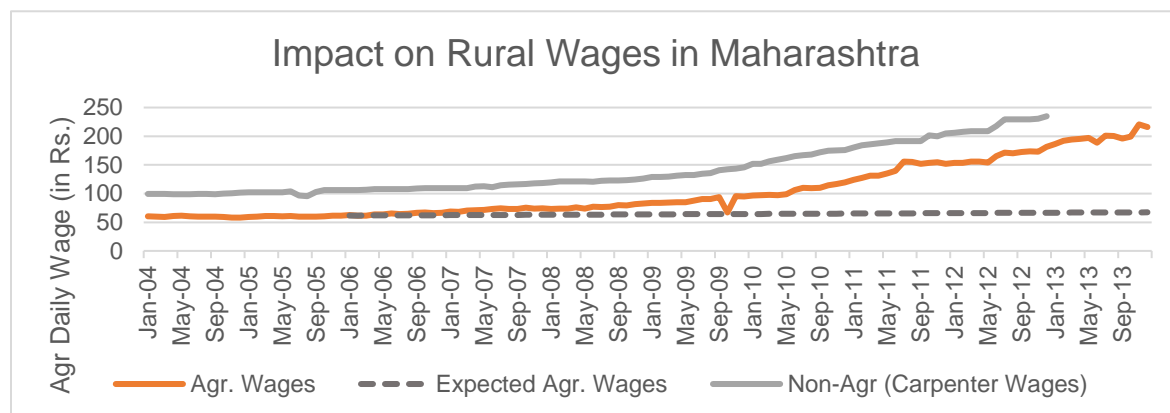
2.3 Impact on Agricultural Wages

NREGA has had a huge impact on the agricultural daily wages in rural areas. From the graph given

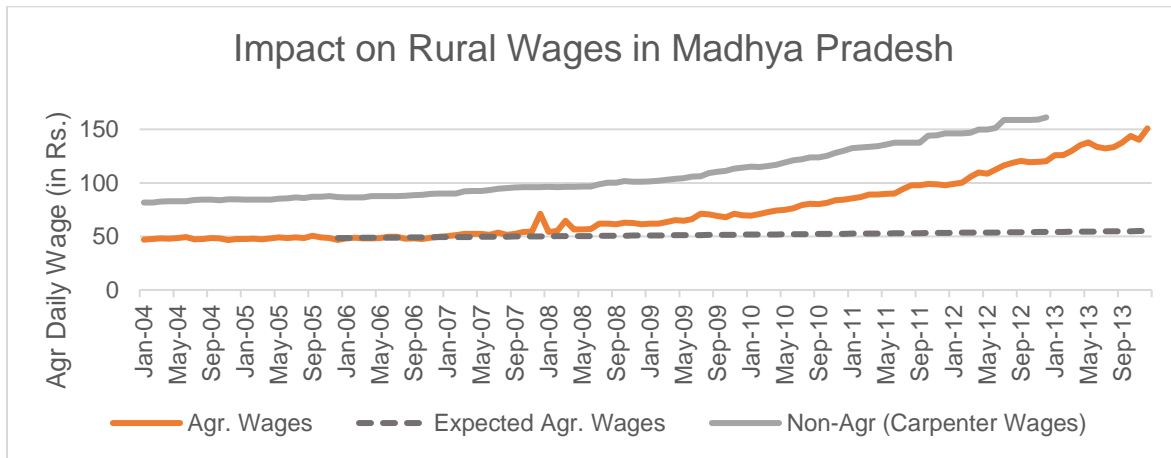


Source: Department of Agriculture and Co-operation

above, it can be observed that the agricultural wages have increased a lot after the introduction of NREGA in 2005. The pattern is observed to be same for industrial states like Maharashtra, Tamilnadu etc. and for backward states like Bihar. The amount of increase in wages was higher in the industrial states because of the presence of other infrastructure and institutions for effective implementation. To understand the impact of the scheme on the rural wages, 2-year CAGR (FY05 & FY06) of rural wages in a state is calculated and the same is to project the expected agricultural wages up to FY14. In industrial states like Maharashtra, the expected agricultural wage in December-13 is Rs.67.34 but the actual wage stood at Rs.215.90. (**220%** Increase). In addition to agricultural wages, non-agricultural wages (like daily wage of a carpenter) also increased in line with the agricultural workers. (From Rs.105 to Rs.235 for a carpenter).

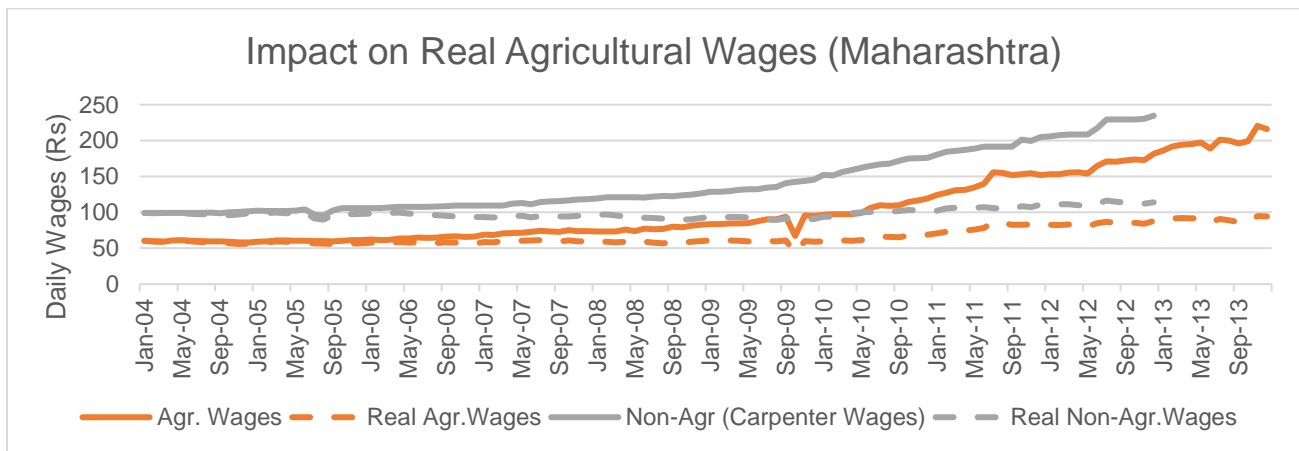


Similarly, for a backward state like Madhya Pradesh, the expected wage in December-13 was Rs.55 but the actual wage was Rs.150.89 (**174%** Increase). Similarly, the daily wages of a carpenter (Non-Agricultural) rose from Rs.87 in 2006 to Rs.161 in 2013.



Source: Department of Agriculture and Co-operation, Ministry of Labour

The rise of agricultural wages in 2004-13 also corresponds to the period of high growth with high inflation in India. To remove the doubt of involvement of inflation in the agricultural wage growth, the real wages are constructed using month-wise rural CPI Index. Before the introduction of NREGA (in the 2004-06 period), the agricultural wage growth was **-2.13%** and non-agricultural wage growth was **-0.54%** in real terms. In the 2006-13 period, the **real agricultural wage growth** was **6.65%** and the **real non-agricultural wage growth** was **2.55%**.



Source: Department of Agriculture and Co-operation, Ministry of Labour

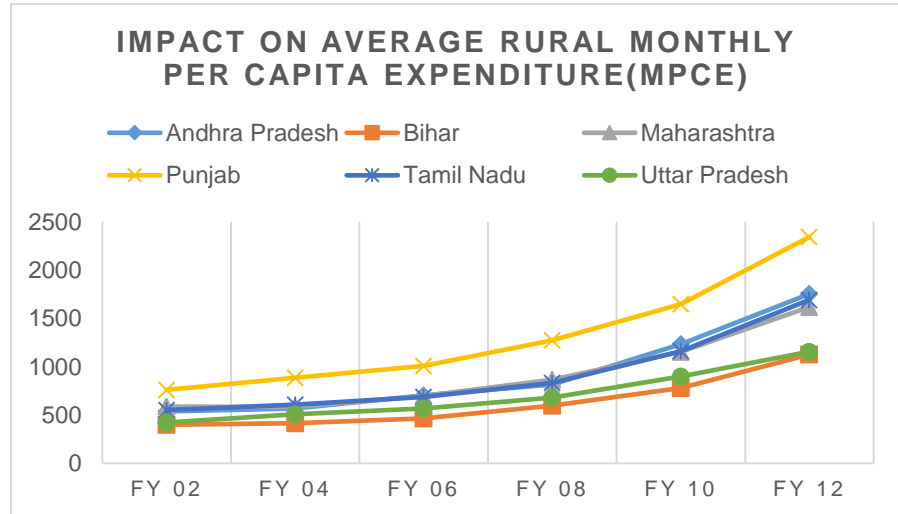
From the above graphs, it can be concluded that –

- Increase in real agricultural wages in rural areas had a corresponding effect on non-agricultural wages in the rural areas
- Presence of infrastructure and institutions in more industrialized states led to higher increase in agricultural wages in comparison to the backward states

2.4 Impact on Household Expenditure

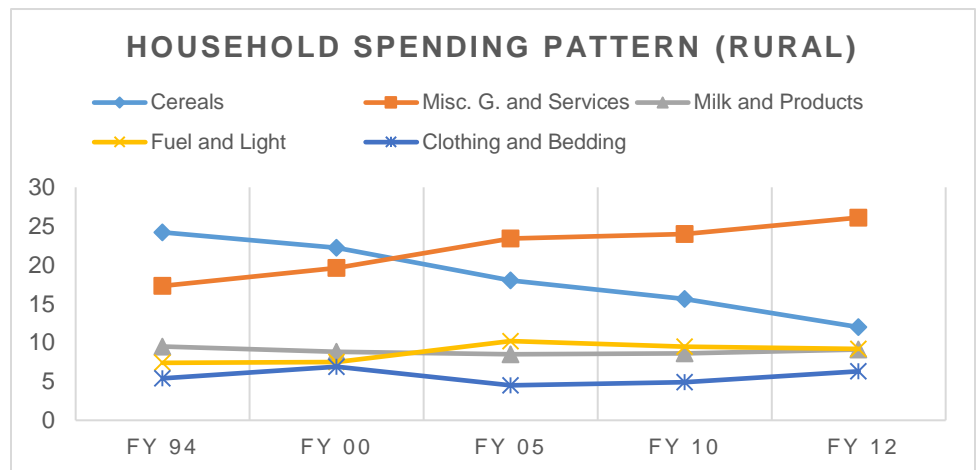
NREGA has resulted in the increase of household expenditure with higher wages. Until the introduction of NREGA, the growth in monthly per capita expenditure (MPCE) in rural areas is linear and after the introduction, the growth in MPCE became exponential.

For the state of Uttar Pradesh, MPCE rose from Rs.422 in FY'02 to Rs. 569 in FY'06 at **7.75% CAGR**. But after the introduction of NREGA, MPCE rose from Rs. 569 in FY'06 to Rs.1156 in FY'12 at **12.52% CAGR**.



Source: Compiled from NSSO Surveys

With increasing rural wages, the household spending was shifting from food items to non-food items. Cereal consumption has reduced from 24.2% in FY'94 to 18% in FY'05 at a rate of 2.65% per year. From FY'05,



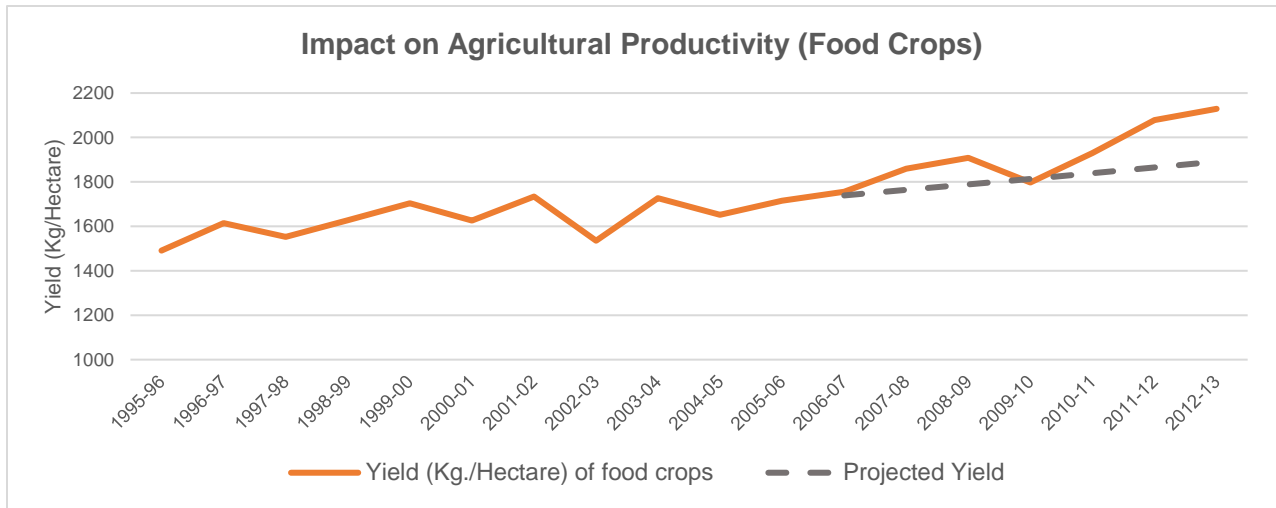
Source: Compiled from NSSO Surveys

cereal consumption has dropped to 12% in FY'12 at a rate of **5.63%**. Household spending pattern in rural areas has changed significantly after the introduction of NREGA.

2.5 Impact on Agricultural Productivity

The majority of NREGA funds was spent on building infrastructure for water conservation and drought proofing. More and more areas received proper irrigation through dug-wells. From FY 05 to FY 13, the area covered under irrigation rose from **44% to 50%**. This did have had an impact on the agricultural productivity in the country. To see the effect of NREGA on agricultural productivity of food grains, the 10-year CAGR (from FY 96 to FY 06) was calculated and was

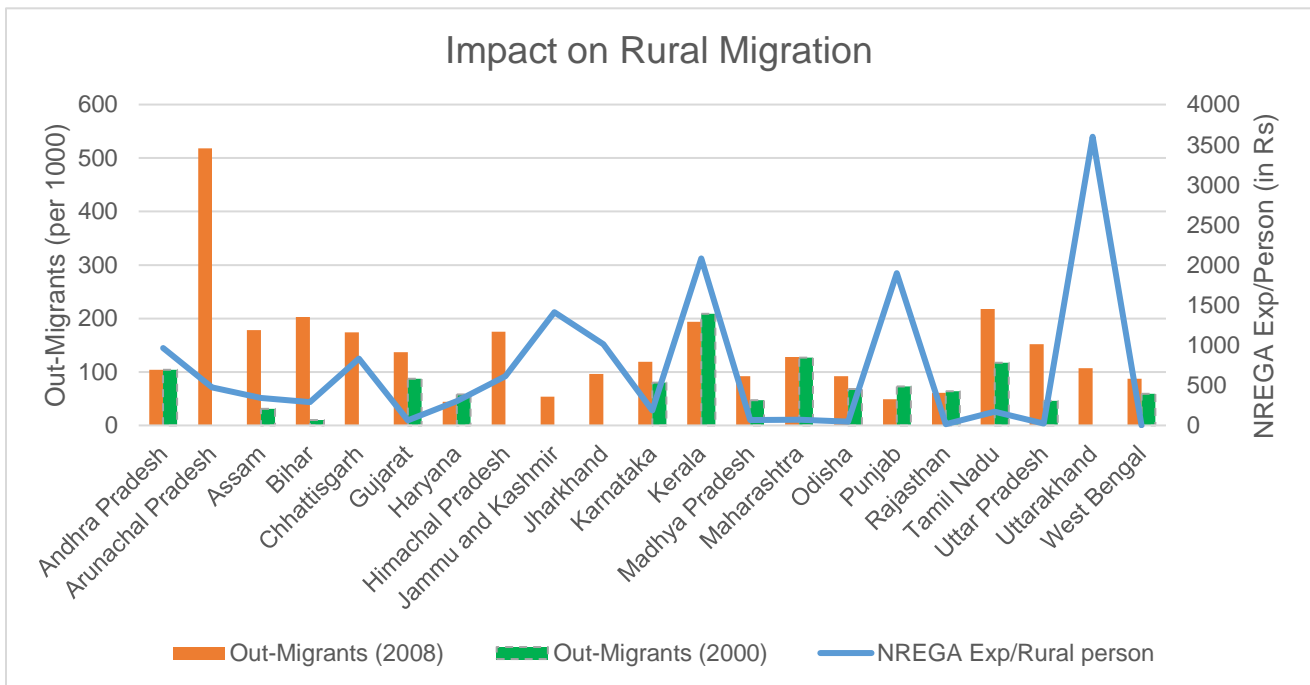
used to project the yield about FY 13. On comparison, it was found that the actual yield per hectare for the food crops was found to be **12.55% higher** than the expected yield.



Source: Department of Agriculture and Co-operations (Through Indiatat.com)

2.6 Impact on Migration

The performance of NREGA in a particular location can be better understood from the migration in that locality. When local wages > NREGA wages, there will be the migration in the locality and when NREGA wages > local wages, the migration is arrested. Apart from the wages, the various implementation issues at Gram Panchayat level do have an impact on the migration. Although out-migration is a better indicator of the performance of NREGA, it is difficult to analyze the different



Source: Compiled from NSSO Surveys

factors that go into migration. To show the effect of the scheme at the state level, the NREGA expenditure in the state was normalized using rural population in the state. NREGA expenditure per rural person in the state will be compared with out-migrants per 1000 (rural areas) in the state. It can be seen that the states with higher NREGA expenditure per rural person like Jammu & Kashmir, Kerala, Punjab, Uttarakhand have lower out-migrants per 1000 in the rural areas compared to their 2000 levels. For the purpose of analysis, north-eastern states are removed from the analysis since they have very high expenditure per rural person compared to other states.

2.7 Impact on poverty

A report on NREGA impact assessment by Prem Vashishtha, P.K. Ghosh and Jaya Koti tries to analyze the impact on poverty by comparing the per capita income levels before and after the launch of the programme. This analysis was done based on the IHDS-II survey.

	Population below poverty line (%)		Percentage point decline	Percentage decline	Contribution of MGNREGA to poverty reduction (%)
	2004-05	2011-12			
MGNREGA participants					
With induced consumption	52.2	31.3	20.9	40.0	—
Without induced consumption	52.2	37.9	14.3	27.4	31.6
Dalit/scheduled caste					
With induced consumption	54.3	33.8	20.5	37.8	—
Without induced consumption	54.3	41.5	12.8	23.6	37.4
Adivasi/scheduled tribe					
With induced consumption	75.8	45.7	30.1	39.7	—
Without induced consumption	75.8	53.9	21.9	28.9	27.3
Illiterate					
With induced consumption	58.9	36.4	22.5	38.2	—
Without induced consumption	58.9	44.4	14.5	24.7	35.4
Less developed villages					
With induced consumption	57.8	34.1	23.7	41.0	—
Without induced consumption	57.8	42.0	15.9	27.4	33.1
More developed areas					
With induced consumption	43.5	26.5	17.0	39.1	—
Without induced consumption	43.5	31.1	12.4	28.4	27.2
Region by MGNREGA participation rate ≤ 20%					
With induced consumption	57.0	44.2	12.8	22.5	—
Without induced consumption	57.0	53.4	3.6	6.3	72.0
Region by MGNREGA participation rate > 40%					
With induced consumption	57.8	31.1	26.7	46.2	—
Without induced consumption	57.8	37.9	19.9	34.4	25.5
MGNREGA vs non-MGNREGA households					
Participants (with induced consumption)	52.2	31.3	20.9	40.0	—
Nonparticipants	39.7	22.5	17.2	43.4	—

Note: Forgone income due to working in MGNREGA is assumed to be zero for MGNREGA participants. For more details of MGNREGA's contribution to poverty reduction for various socioeconomic groups, see Appendix A3.6. Contribution of MGNREGA to poverty reduction = (percentage decline with induced consumption – percentage decline without induced consumption) / percentage decline with induced consumption. Assumptions about alternative MPC calculations: Deciles 1–3 (MPC 1.0), deciles 4 and 5 (0.9), decile 6 (0.85), decile 7 (0.8), decile 8 (0.75), decile 9 (0.70), decile 10 (0.6).

Source: Authors' calculations from IHDS.

Source: Mahatma Gandhi National Rural Employment Guarantee Act, A Catalyst for Rural Transformation, Sonalde Desai, Prem Vashishtha and Omkar Joshi

NREGA is said to have had 2 different types of effects –

- Direct impact: By directly improving the income levels of the NREGA participants
- Indirect impact: By increasing the wages level of the locality thus benefitting both the participants and non-participants of NREGA

The study also reveals that the less developed areas have small multiplier effect from NREGA because of lack of better infrastructure to have a greater indirect impact. The following figure indicates the contribution of NREGA in poverty reduction.

2.8 Impact on Education

NREGA is also known to have improved the education levels of the NREGA households. A report on NREGA impact assessment by Prem Vashishtha, P.K. Ghosh and Jaya Koti also validates this hypothesis on education. A IHDS study on a village level substantiates the fact that children in NREGA households completed higher standards, can do better mathematics, worked less as child laborers and spent more time in school and education related activities.

	2004–05	2011–12	Difference	Difference-in-differences	Significance for difference-in-differences
Standards completed (ages 6–14)					
Low MGNREGA participation village	3.43	3.87	0.44		
Nonparticipant in high-participation village	3.14	3.59	0.45	0.01	*
MGNREGA participant households	3.00	3.74	0.74	0.30	***
Can read a paragraph (ages 8–11)					
Low MGNREGA participation village	55.6	49.0	-6.58		
Nonparticipant in high-participation village	50.7	49.4	-1.34	5.24	**
MGNREGA participant households	40.3	43.1	2.80	9.38	***
Can subtract two-digit numbers (ages 8–11)					
Low MGNREGA participation village	48.2	43.3	-4.84		
Nonparticipant in high-participation village	43.8	40.6	-3.18	1.66	
MGNREGA participant households	34.6	36.0	1.43	6.27	***
Educational expenses (ages 6–14)					
Low MGNREGA participation village	1393	2411	1018		
Nonparticipant in high-participation village	1428	2212	784	-234	**
MGNREGA participant households	911	1377	466	-551	***
Participate in wage work (ages 11–14)					
Low MGNREGA participation village	2.1	1.9	-0.252		
Nonparticipant in high-participation village	3.0	2.1	-0.892	-0.640	***
MGNREGA participant households	5.9	4.2	-1.661	-1.409	***
Hours spent in school, doing homework and at tuition (ages 6–14)					
Low MGNREGA participation village	33.5	37.4	3.9		
Nonparticipant in high-participation village	31.1	37.0	5.8	1.9	***
MGNREGA participant households	29.8	37.0	7.2	3.3	***

Note: * $p \leq 0.1$, ** $p \leq 0.05$, *** $p \leq 0.01$. Significance calculated by a linear probability model with control for social group, household income, village development and state of residence. Difference-in-differences calculated vs. low MGNREGA participation villages.

Source: Authors' calculations from IHDS.

Source: Mahatma Gandhi National Rural Employment Guarantee Act, A Catalyst for Rural Transformation, Sonalde Desai, Prem Vashishtha and Omkar Joshi

2.9 Financial Inclusion

Before the introduction of Jan Dhan Yojana, NREGA has helped in achieving financial inclusion of the lower strata of the society. In certain states, NREGA workers are paid through their accounts in banks and post offices. The scheme is known to have removed corruption at several levels through direct transfer of wages. As of 2015, 90% of NREGA payments are done through bank accounts.

A case study was done in Odisha in the year 2013 by Minati Sahoo from Central University of Odisha to assess the financial inclusion through NREGA. Direct wage transfer has resulted in the creation of bank accounts in an enormous rate (30-40% CAGR). The following table proves the financial inclusion through NREGA in Odisha.

	FY 9	FY 10	FY 11	FY 12	FY 13
No. of bank & post office account opened	18,30,009	25,97,403	57,26,707	37,05,424	40,27,196
Total Amount Disbursed (Rs.in lakhs)	22,929	56,603	83,590	54,898	38,546

Source: <http://iosrjournals.org/iosr-jhss/papers/Vol14-issue2/101425461.pdf?id=6719>

The drawbacks of direct wage transfer scheme of NREGA are

1. Slow disbursement of wages disbursement through NREGA. This is a serious problem in Jharkhand, West Bengal, UP, Chhattisgarh and Rajasthan.
2. There are cases of corruption reported through this mechanism. Some of the implementing agencies are alleged to have colluded with the banks and are withdrawing money from beneficiaries account illegally.

3 Case Study

Four districts – Two in Maharashtra and two in Odisha have been considered to study the impact of the NREGA on the gross domestic product, employment level etc.

3.1 Maharashtra

3.1.1 Overview

Beed district is located in central part of Maharashtra. The main occupation in the district is Agriculture. Kolhapur district is located in the southern part of Maharashtra. Textile manufacturing is the main occupation in the district.

2011 Census	Beed	Kolhapur
Area (Thousand Square K.M.)	10	8
Towns (As of 31st March 2011)	6	6
Talukas (As of 31st March 2011)	11	12
Villages (As of 31st March 2011)	1354	1239
Total Population (Thousand)	2161	549

3.1.2 Expenditure

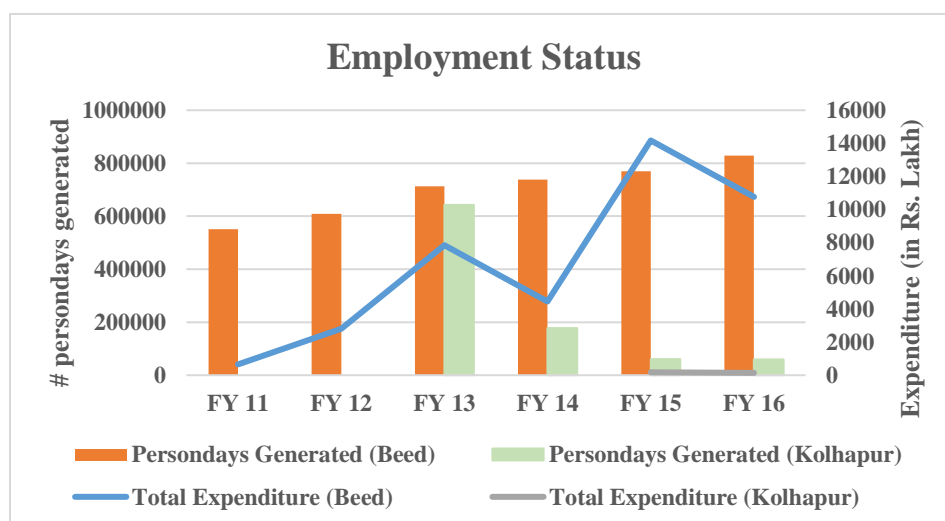
NREGA expenditure trend in Beed and Kolhapur district was in line with the national picture, where there was a decrease in expenditure in FY 14 and then afterward increases.

Beed (Number of works completed)				
Work Category	FY 13	FY 14	FY 15	FY 16
Water Conservation	1554	732	620	2298
Rural sanitation	0	185	635	584
Any other works	138	353	186	548
Improving productivity of lands	366	159	202	401
Improving livelihoods through	163	345	70	217
Road connectivity/Internal roads/Streets	79	74	88	177
Other Works	115	110	50	132
Kolhapur District (Number of Completed Works)				
Work Category	FY 13	FY 14	FY 15	FY 16
Improving livelihoods through	341	146		115
Water Conservation	100	86		106
Afforestation	139	51		35
Road connectivity/Internal roads/Streets	236	70		18
Land development	2	1		6
Any other works	1218	627	0	18

As seen from the above table, water conservation projects were taken up in large numbers in Beed District and individual livelihood projects were taken up in Kolhapur.

3.1.3 Employment Status

The following graph shows the number of person-days of work generated against the expenditure incurred for creating this situation. The number of person-days generated kept on increasing although there was a slight decrease in expenditure. This indicates the NREGA has been implemented well and the effect of the investment can be clearly seen in Beed.



Source: <http://nrega.nic.in>

3.2 Odisha

3.2.1 District Overview

Puri is a district in Odisha state situated on the eastern coast, well-known for the heritage sites. Tourism and fishery are the main source of revenue for the district. The important statistics of the district is shown in the table below.

Angul is an industrial district, situated 150 km from the capital city of Bhubaneswar. Jindal Steel Plant and Bhushan Steel plant are the two renowned private organizations.

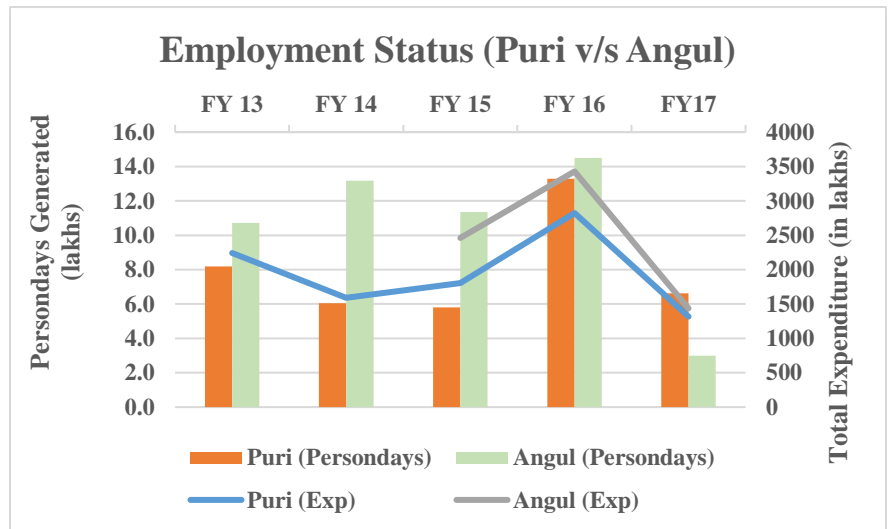
Area & Population	Puri	Angul
Area (Thousand Square K.M.)	3.48	6232
Towns (As of 31st March 2011)	6	18
Villages (As of 31st March 2011)	1707	1871
No. of Gram panchayats	230	209
Total Population (Thousand)	1699	1272
Density of Population(Person/sq.km)	488	199

3.2.2 Expenditure

NREGA expenditure trend in Beed district for the last 6 years is shown in the following graph. The expenditure trend does not show any kind of pattern and the effect can also be seen in the number of person-days generated. Huge expenditure has occurred in FY 11 and FY 16 and the corresponding effect can be seen in those years.

Comparing with the performance of Beed, the effectiveness of NREGA in Puri is very low. Huge variability in the expenditure pattern might be a reason for the low performance.

One interesting fact about Puri is that **only 3% of the eligible people actually turn up for the jobs.**



Source: <http://nrega.nic.in>

Work Category Split up - Angul District					
Work Sub Category	2012-13	2013-14	2014-15	2015-16	2016-17
Construction of house	0	0	0	1764	2008
Land development	19	113	160	168	349
Road connectivity/Internal roads/Streets	374	343	172	140	192
Improving livelihoods through	11	13	29	276	175
Improving productivity of lands	758	453	205	62	96
Other works	545	425	417	500	380

Work Category Split up - Puri District					
Work Sub Category	2012-13	2013-14	2014-15	2015-16	2016-17
Construction of house	0	0	0	1299	1613
Improving productivity of lands	495	507	389	592	204
Road connectivity/Internal roads/Streets	143	244	299	333	55
Construction of building	29	13	28	93	55
Traditional water bodies	142	356	343	321	37
Others	44	186	445	1242	141

4 Issues of MGNREGA

MGNREGA is arguably one of the biggest social welfare scheme, launched by the Indian government. But like any other scheme, MGNREGA also faces some bottlenecks when it comes to the phase of implementation. The most interesting aspect is that certain implementation issues are specific to some states.

4.1 Lack of Awareness

The biggest bottleneck of MGNREGA is the lack of awareness among backward states. For instance, in Odisha, people fail to relate to MGNREGA, but false records show the opposite story. Places where awareness is minimal, MGNREGA implementation has taken a hit. On the other side, in the southern state of Andhra Pradesh, the Self Help Groups (SHGs) have carried out an extensive promotion for MGNREGA. As a result, the impact of AP compared to low awareness state like Odisha is far better.

4.2 Poor quality

The purpose of MGNREGA has been to provide employment, in turn developing rural infrastructure. This **asset creation model is not successful** for all assets. Most of the work is labor intensive and unskilled labor is employed which sometimes results in poor quality. Projects like well construction, road connectivity, etc require a lot of rework. ROI is very less for this kind of projects. **Shortage of technical staff** to oversee the implementation process is also the reason of poor quality of the assets created.

4.3 Improper planning

The progress of MGNREGA varies across states. One of the main reason is **improper planning** of the projects. It results in abandonment of projects in mid-way. Some of the key reasons for abandonment are

- Land dispute
- Administrative issues like forest clearance
- Public Obstruction

As per CAG report (2013), 9220 project works worth INR 209 crores were abandoned or not completed as expected. Improper planning leads to issues in project allotment. Lack of structured approach by the officials leads to **allotment of new projects** in the annual plan, even **before completion of the existing plans**.

4.4 Work Rationing

MGNREGA got a good welcome in many southern states like Kerala, Andhra Pradesh, etc. But there is no sufficient work available to provide the promised 100 days of employment. Reasons for work rationing are the unavailability of land, the rapid growth of industrialization, etc. As per statistics, the percentage of households experiencing work rationing in lowest and highest income quintile is 92% and 88% respectively.

4.5 Payment Issues

Payment delays are prominent across all the sites of MGNREGA. It sets a bad tone and due to the word of mouth, people in other regions don't feel encouraged to enroll for the scheme. The table highlights certain peculiar implementation issues, specific to some states, apart from the general issues discussed earlier.

States	Issues
Gujarat	Political feud between BJP and UPA; Fraudulent bureaucracy; Lack of political push
Andhra Pradesh	Lack of unity among panchayat
Odisha	Renting of Job card; Seasonality of work
Madhya Pradesh	Seasonality of work: work available in summer, but people demand work in Rabi season
Punjab	Lack of enthusiasm from state officials, information asymmetry

5 Recommendation

The introduction and implementation of NREGA posed financial difficulties for the Government. It, in some of the years, has had an impact on the fiscal deficit status of the country. Given the huge expenditure, NREGA also did not fail in delivering its key objectives. Although the provision of 100-days of work is never fully achieved, given the implementation constraints, it increased the real agricultural wages, increased agricultural productivity, increased housing expenditures on food and services, reduced poverty and migration. NREGA households were able to impart better education to their children. Most important of all, NREGA has helped in creating rural infrastructure like wells, tanks, roads etc that are supposed to have the multiplier effect in the economy. Hence, NREGA could be seen as a scheme that gave both the long-term and short-term benefits to the rural people. But the scheme is not without disadvantages. Rising agricultural wages

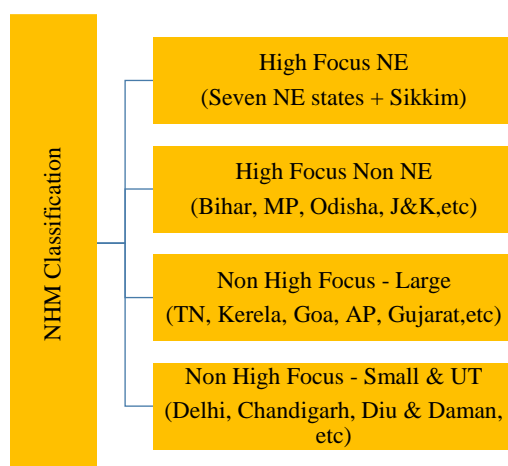
did fuel inflation partly and rural laborers have become more dependent on the scheme and have stopped going for permanent and better prospects in some areas. But the scheme is not implemented to its potential in all the places. For better implementation of the scheme, we propose the following recommendations.

- **Follow bottom-up model** – Empower Gram Panchayat (GP) to decide on the allocation of works and state level authorities will just verify and approve it.
- **Implement awareness programs** with the help of SHGs (Self Help Groups) in backward states like Odisha, Jharkhand, etc.
- **Two level audit committee** to review the progress of the projects – Audit committee members will have the representative of ruling and opposition parties.
- **Streamline payment process** by removing middlemen (Gram Panchayat). People can get payments directly in their bank accounts on submission of work receipts.

National Health Mission (NHM)

6 Introduction

National Health Mission is an initiative, launched in 2005 by Government of India. The objective of the scheme is to address the health needs of Indian citizens. Initially launched as a social welfare scheme targeted to rural India, the scheme was expanded to urban India by then PM Dr. Manmohan Singh in May 2013. Indian states are divided into four segments based on the intensity of focus and implementation of NHM. The funding for the scheme is divided between central and state government in the ratio 60:40 respectively.



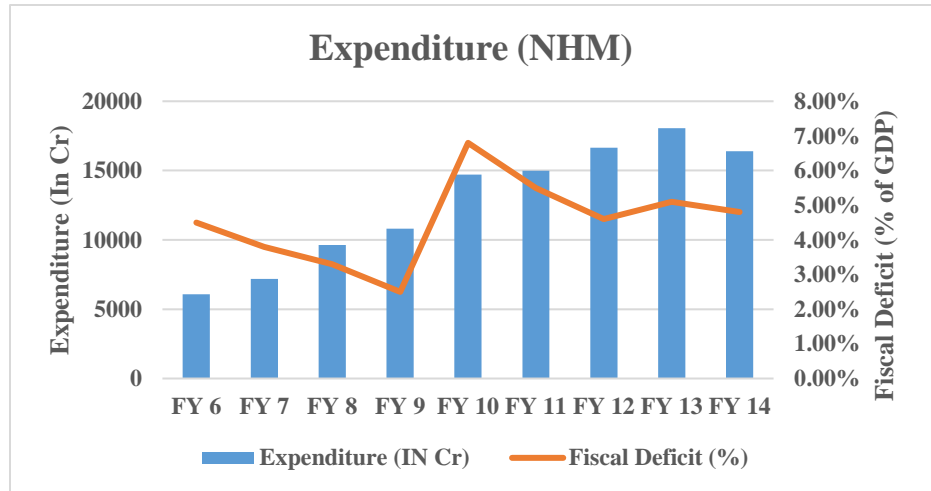
During the inception of the scheme, the objectives [3] are set as

- Reduce Maternal Mortality Rate to 1/1000 live births
- Reduce Infant Mortality Rate to 25/1000 live births
- Reduce Total Fertility Rate to 2.1
- Reduction of anaemia in women
- Reduce mortality from communicable, non- communicable; injuries and emerging diseases
- Reduce household out-of-pocket health expenditure
- Halve Tuberculosis incidence and mortality rate
- Reduce prevalence of Leprosy to <1/10000 population
- Annual Malaria Incidence to be <1/1000
- Less than 1 per cent microfilaria prevalence in all districts
- Kala-azar Elimination by 2015, <1 case per 10000 population in all blocks

7 Funds Allocation

The following graph shows the expenditure incurred under NHM since its inception in 2006. Currently, the expenditure is incurred in the range of Rs. 15000 – Rs. 20000 Crore.

The funds allocated under 5 different heads – i) NRHM-RCH Flexible pool ii) NUHM flexible pool iii) Flexible pool for communicable diseases iv) Flexible pool for non-communicable diseases v) Infrastructure maintenance.



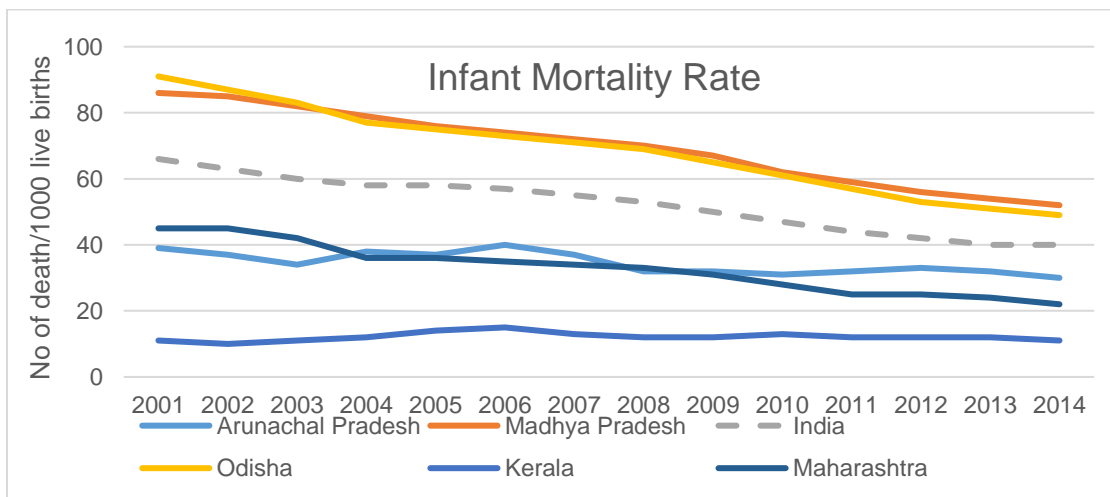
Source: <http://indiabudget.nic.in>

8 NRHM-RCH

The Reproductive and Child Health program was launched in April 2005 as a part of NRHM. The impact of the program can be gauged by various parameters pertaining to health sector namely Mortality rate, Fertility Rate, Immunization, Institutional deliveries, Recorded hospital cases, life expectancy rate, etc.

8.1 Infant Mortality Rate (IMR)

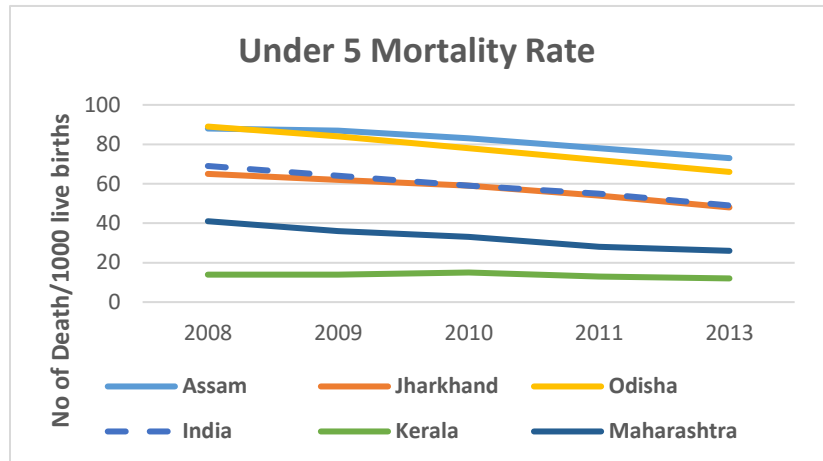
It is the rate which reflects the number of infant death occurring per 1000 live births. The IMR of India is around 50. From the graph, we can infer, the mortality rate is more in states like Odisha and MP which are huge in area and economically backward. So, lack of institutional facilities and hospital infrastructure developments could be a reason behind high IMR compared to national average. One good thing is that with increased spending through NHM, IMR has been on the decreasing trend.



Source: Compiled from Sample Registration system RGI's Office 2008

8.2 Under 5 Mortality Rate (U5MR)

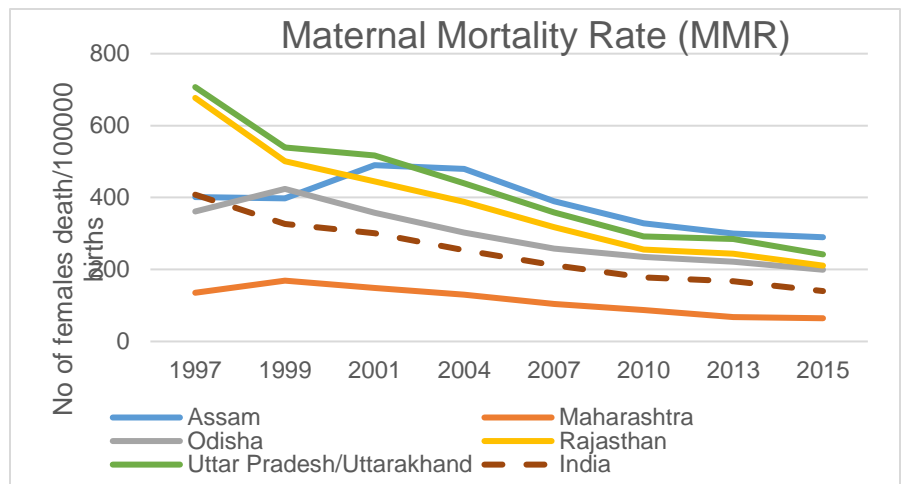
It is the rate which reflects the number of below 5-year old children deaths per 1000 live births. Though Assam had a less IMR, it has a high U5MR, almost 1.5 times of national average. It can be observed that U5MR has significantly reduced in backward states like Assam compared to other states like Kerala etc.



Source: Compiled from Sample Registration system RGI's Office 2008

8.3 Maternal Mortality Rate (MMR)

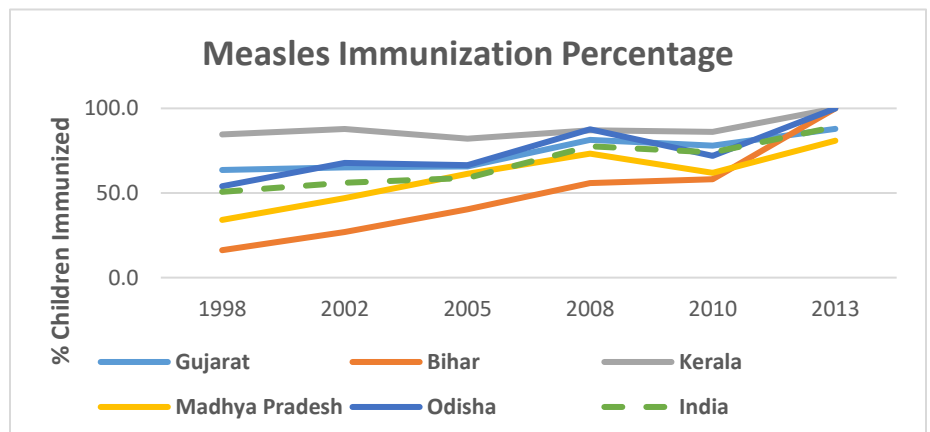
It is the reflection of the number of deaths of pregnant women during delivery per 100000 live births. Lack of efficient infrastructure and inexperienced professionals (doctors, technicians) are a major reason pointed out by many segments of society. In the state like Assam, MMR fluctuates. The inefficacy during delivery might be a reason behind high U5MR in Assam.



Source: Reports from <http://www.mohfw.nic.in>

8.4 Immunization

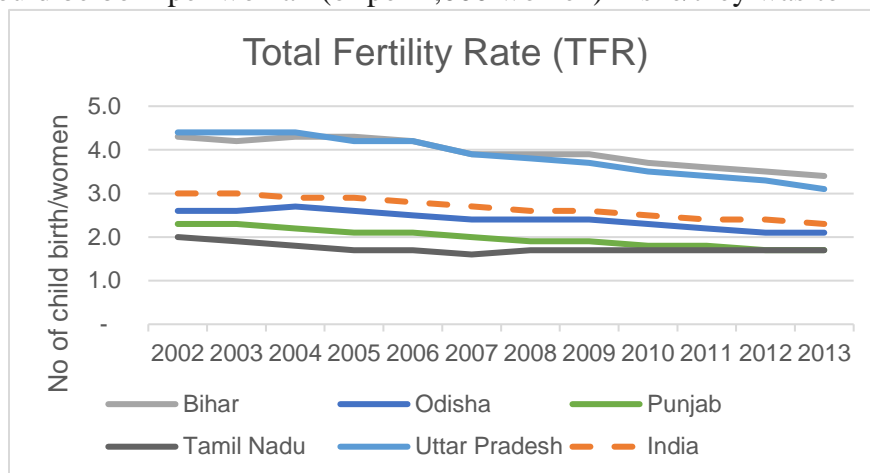
Immunization is one program of NRHM, which has been implemented with sheer determination. Almost all states, irrespective of economic background, have shown insignificant improvement in this program implementation.



Even a state like Odisha, which has high mortality rate has achieved almost 100% vaccination for children.

8.5 Total Fertility Rate (TFR)

The number of children who would be born per woman (or per 1,000 women) if she/they was to pass through the childbearing years bearing children according to a current schedule of age-specific fertility rates. It is almost same across the country, except Bihar and Odisha. Reducing the TFR to 2.1 will help in reduce the population explosion in the country.



Source: <http://indiastat.com>

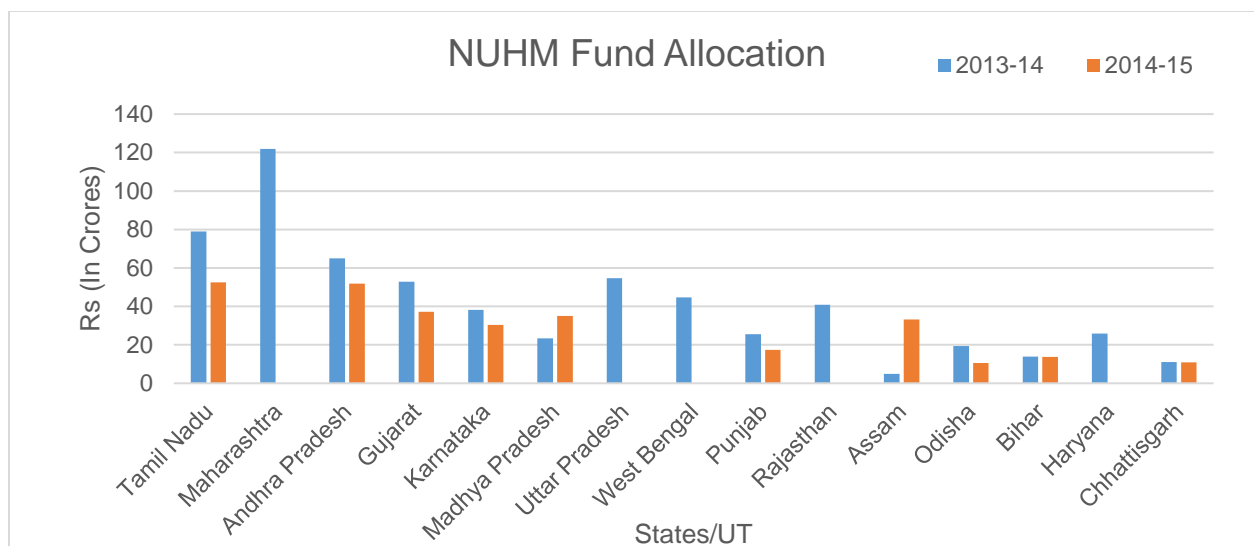
9 NUHM

The urban population in India has increased by 32% from 28.6 crores to 37.7 crores between 2001 to 2011 [4]. This urban segment forms 31% of total Indian population. With such rapid increase in Urban population, infrastructure and health sector pose a major concern to the administrators. The proximity of health facilities in urban India is relatively better than that in rural parts. But the access is poor. The increase in the population has created a disparity in health accessibility between urban poor and urban rich. Keeping this in mind, **to cater the health needs of urban poor**, the Government of India launched the urban health program, NUHM in the year 2013. The total funds allocated to all states in India along with split up of top 5 allocations is tabulated below.

NUHM Fund Allocation (Rs. in Crore)			
States/UTs	2013-14	2014-15	Total
India	662.23	306.81	969.04
Tamil Nadu	78.99	52.57	131.56
Maharashtra	121.94	0	121.94
Andhra Pradesh	65	51.86	116.86

Source: Ministry of Health reports

The southern states of Tamil Nadu, Karnataka and Andhra Pradesh have been allotted 33% of total NUHM funds.



Source: Ministry of Health, Ministry of Finance reports

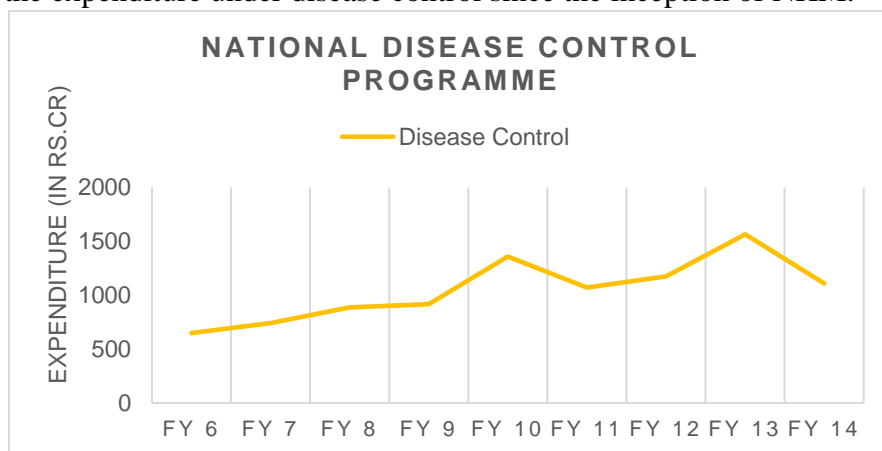
The NUHM program is in its early stages of implementation and gauging the clear impact is difficult. Having said so, NUHM concentrated on improving the infrastructural facilities to eradicate the inefficacy of outreach for urban poor and scaling down the information asymmetry between the primary and secondary level hospitals. The impact of NUHM can be reflected based on the following:

- Decrease in lifestyle diseases
- Drinking water and sanitation issues
- Investment in Urban Health Care Centre and programs like ASHA.

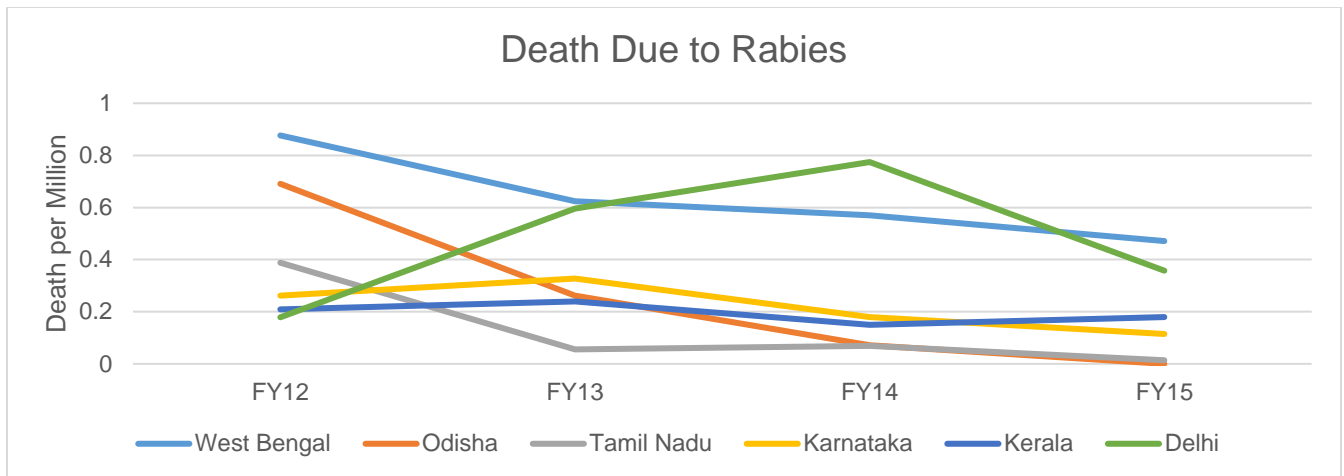
10 Disease Control

The following graph shows the expenditure under disease control since the inception of NHM.

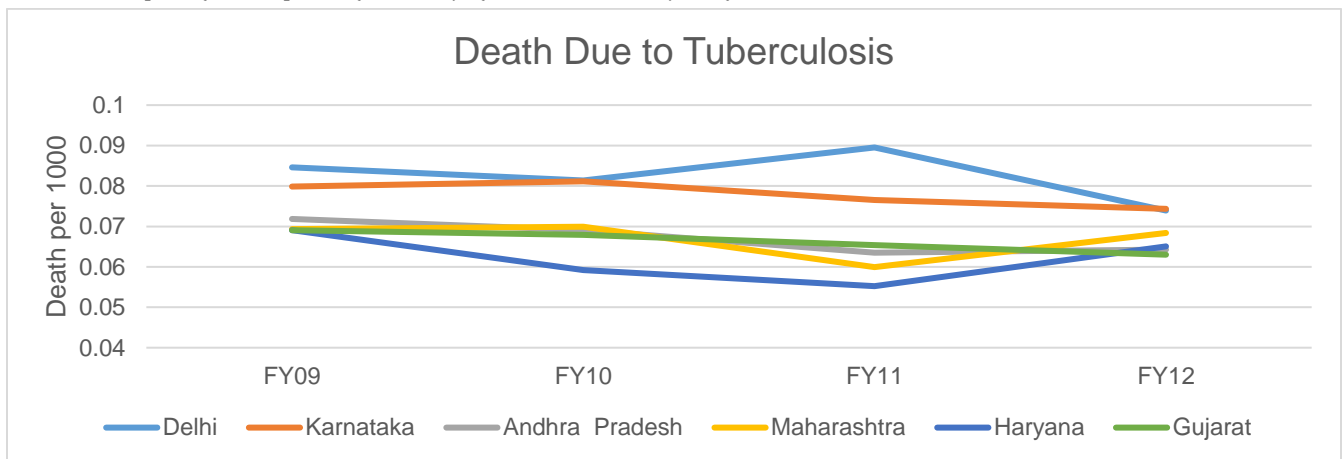
The allocation of funds under National disease control programme has been divided into two different heads from FY14 as – i) Flexible pool for communicable diseases ii) Flexible pool for non-communicable diseases.



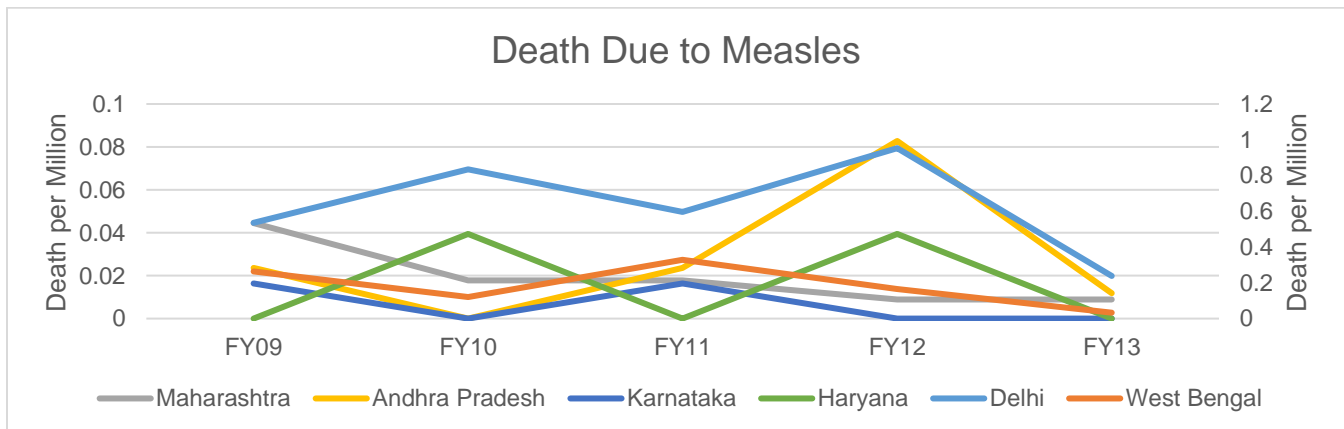
Source: <http://indiabudget.nic.in>, Ministry of Health reports



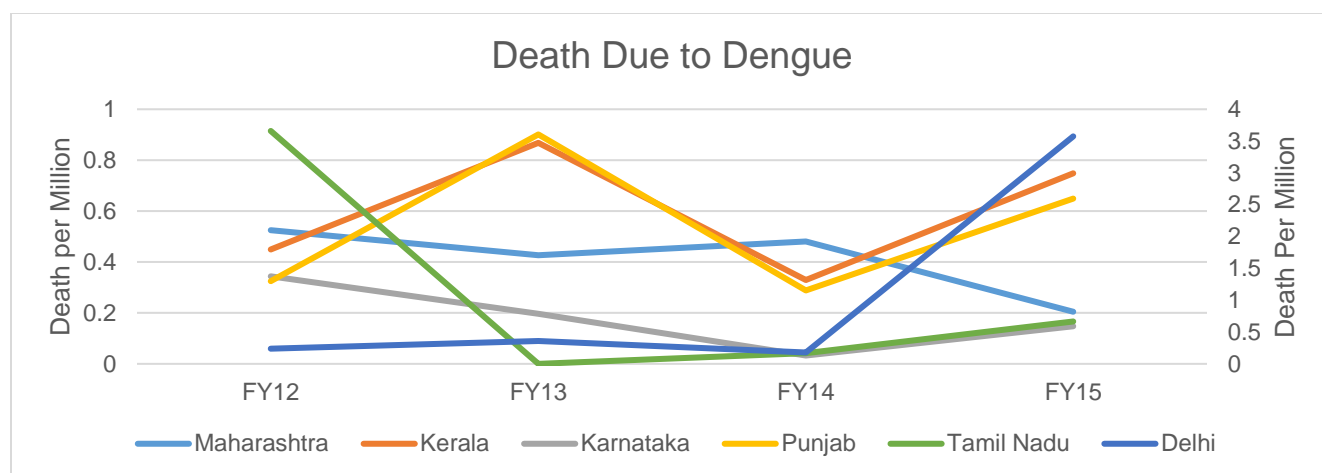
Source: Compiled from reports of Ministry of Health & Family Welfare



Source: Compiled from reports of Ministry of Health & Family Welfare



Source: Compiled from reports of Ministry of Health & Family Welfare



Source: Compiled from reports of Ministry of Health & Family Welfare

Given the expenditure on disease control, the impact can be clearly seen in diseases like Rabies, Tuberculosis, Measles etc which had separate funding for a long time to control them. For new diseases like Chikungunya, Dengue etc. the impact of the disease control cannot be clearly established because of non-availability of effective medicines etc.

11 Infrastructure Maintenance

About 25% was spent on the infrastructure development under NHM. This fund is utilized in building i) Primary health centers ii) Community health centers and iii) Sub-centers. Under Infrastructure development in NHM, ambulances services provided have more than doubled in the 3-year span.

Year	2011-12	2012-13	2013-14	2014-15 (upto Sep-2015)
# Ambulances (under NHM)	7206	11661	18095	19316*

Source: <http://www.indiastat.com>

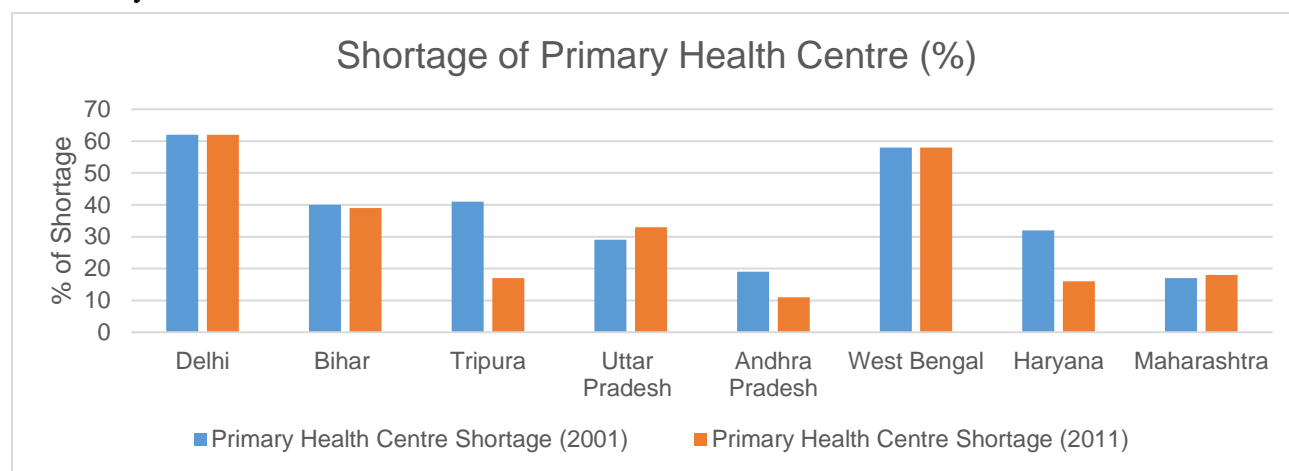
As of FY 2014, the following table the health facilities completed and under construction (under NHM)

Type of Facility	District Hospital	Sub-District Hospital	Community Health Centre	Primary Health Centre	Other than Sub-Centre	Sub Centre
Facilities - Completed	670	577	2192	7781	672	12608
Facilities - Sanctioned	910	643	3300	9030	934	17395

Source: <http://www.indiastat.com>

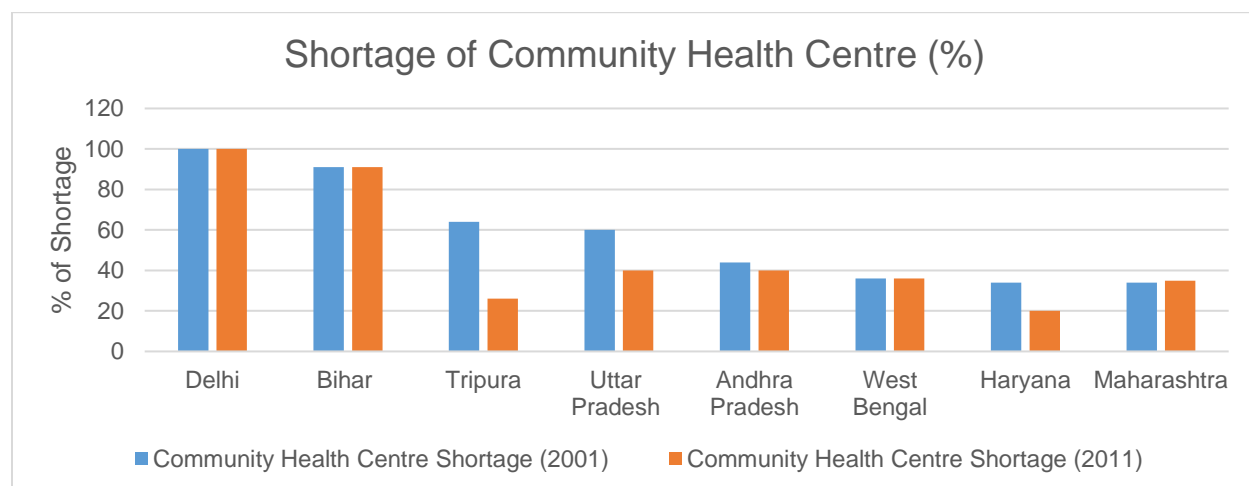
To see the effectiveness of the spending on the infrastructure development, % of the shortfall of different health centers (in rural areas) in 2011 is compared with of 2001 Census data. It can be

observed that the most of the states have bridged the shortfall in the health centers using this fund effectively.



Source: Compiled from reports of Ministry of Health & Family Welfare

It can be seen that the states like Andhra Pradesh, Haryana and Tripura have significantly reduced their shortfall in primary health centers.



Source: Compiled from reports of Ministry of Health & Family Welfare

The shortfall in community health centers in rural areas have fallen in states like Tripura, Uttar Pradesh, Andhra Pradesh and Haryana etc.

11.1 Health Manpower

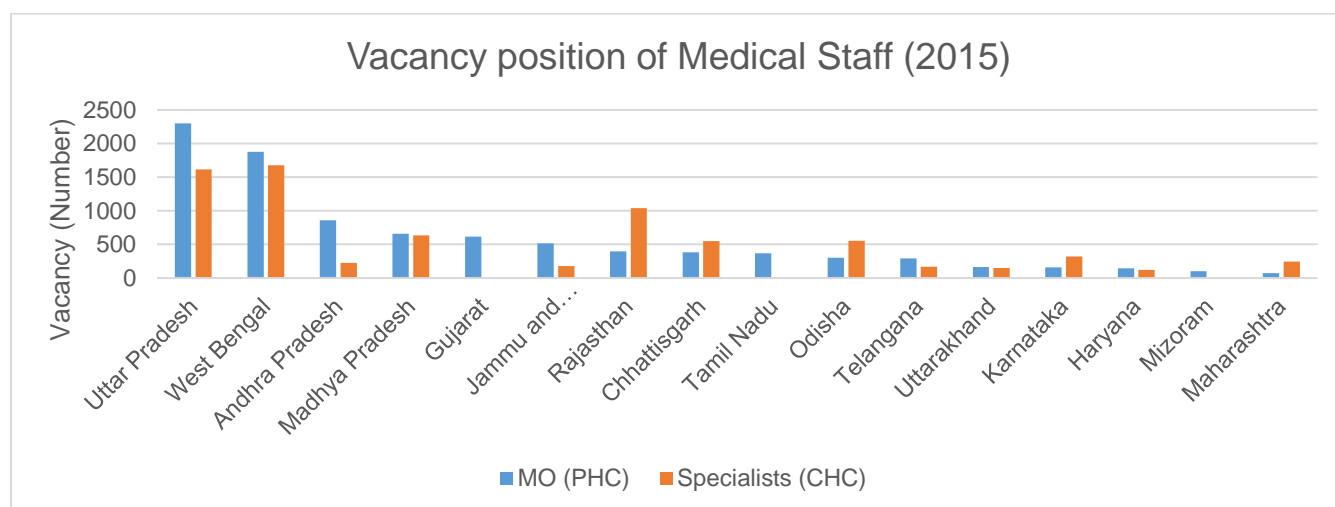
A significant amount spending has also been made in recruiting and training the manpower. This has helped in reducing the manpower shortage in the government hospitals. The following table shows the manpower employed under NHM as of June-2015.

Medical Staff	
General Duty Medical Officer	7263
Paramedics	17362
ANMs	73154
Specialists	3355
Nurses	40847
AYUSH Doctors	24890
AYUSH Paramedics	6005

Non-Medical Staff	
District Program Manager	604
District Account Manager	612
District Data Manager	577
Block Manager	3730
Block Accountant	4906
PHC Accountant	5165

Source: <http://www.indiastat.com>

Although a large number of medical staff are trained and recruited still a lot of states face a huge shortage in medical officers in PHC and DH level.



Source: Compiled from reports of Ministry of Health & Family Welfare

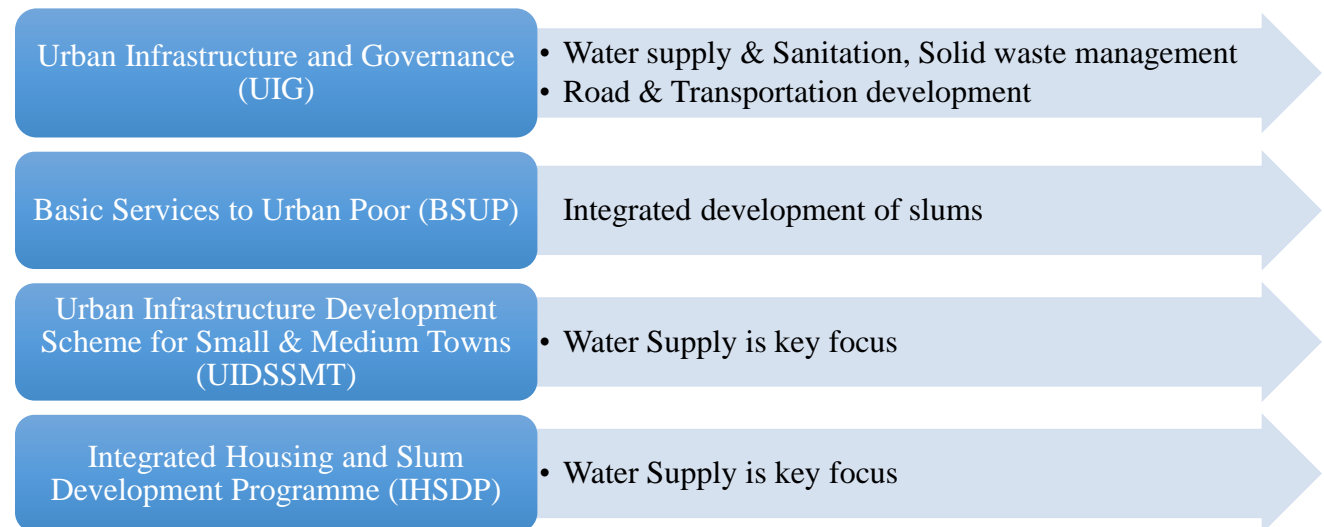
12 Conclusion

National health mission does not have the significant effect on the fiscal deficit, unlike NREGA. But, it has had the significant impact in terms of improving the health indicators. In the field of child care, NHM has done an incredible job in reducing the under-5 mortality rate, infant mortality rate, and maternal mortality rate. Immunization has also helped in reducing the incidence of fatal diseases. This can be seen in the reduction of death per 1000 for the fatal diseases. NHM has failed to reduce the incidence of new epidemics of several factors – lack of awareness, non-availability of medicines etc. It has created huge health infrastructure for the rural and urban population but there is a long way to go in meeting the international standards.

Jawaharlal Nehru National Urban Renewal Mission

13 Introduction

The imbalance in the economic opportunities existing in urban and rural India is one of the sole reason for urbanization to grow at a rapid pace. The population living in Urban India increased from 11.4% in 1901 to >30% in 2011 [5]. This number is expected to increase and touch 40.76% by 2030 as per survey by UN State of the World Population report. [6] In order to cater to the needs of the growing urban population and improve the quality of life, Government of India launched a massive urban social welfare scheme JNNURM in the year 2005. JNNURM is a large-scale modernization scheme of Urban India which targets the infrastructural and basic civic facilities. The scheme is sub divided in four sub-mission targeting different sections of Urban India based on population, income level and needs. Water Supply remained the key focus and target to be achieved.

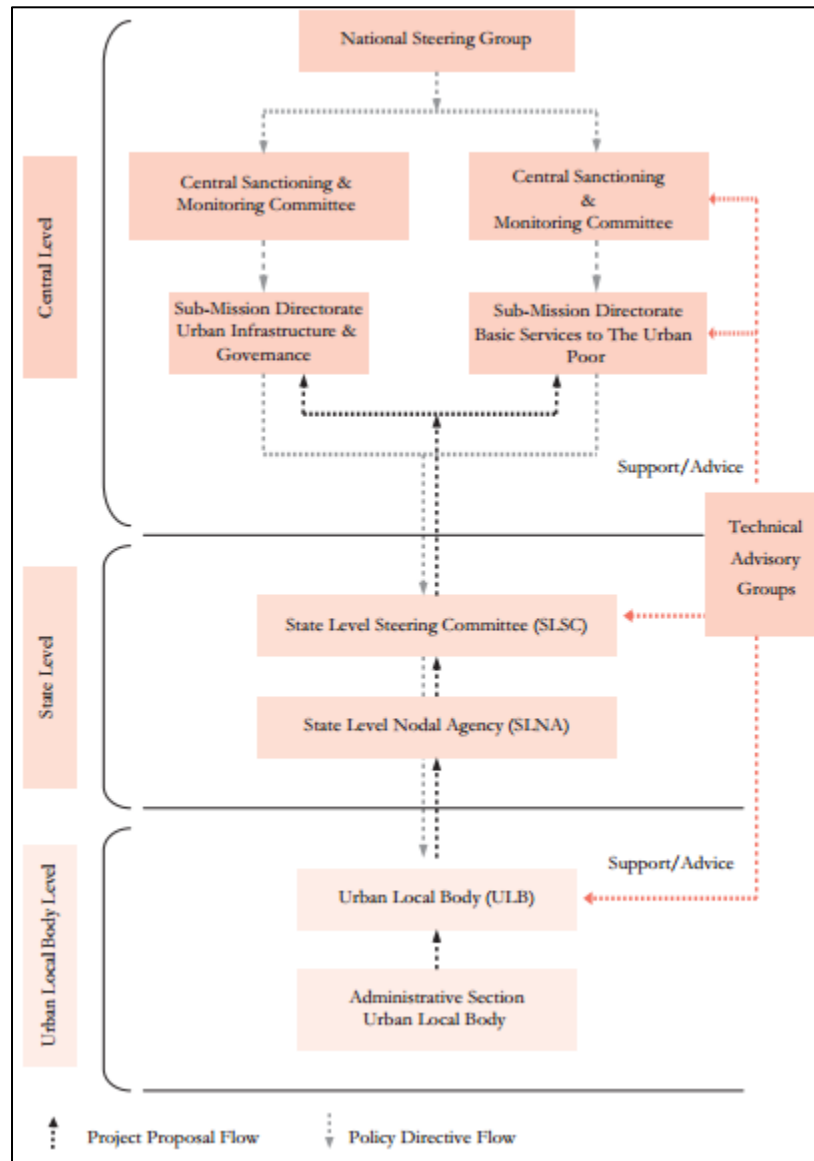


A total investment of \$20 billion was allotted to the scheme which was distributed over seven years. Though the initial plan was for seven years, the scheme was extended to two more years till 2014-15. *Inefficiency in execution and scope for new projects* were the two major reasons for the extension and they varied across states.

13.1 Institutional Structure

JNNURM has the organizational structure as shown in the following figure [7]. National steering committee comprising of secretaries of Urban development, Planning commission and expenditure set the objectives and provide direction to the scheme. Projects are reviewed and approved by the Central Monitoring Group (CMG). State steering committee comprising of ministers/secretaries of Urban development, Urban Local Bodies (ULBs) identify and propose the projects to the CMG

for approval. Urban local bodies are entrusted with the responsibility of implementing the scheme. The current organizational structure of the scheme is presented below.



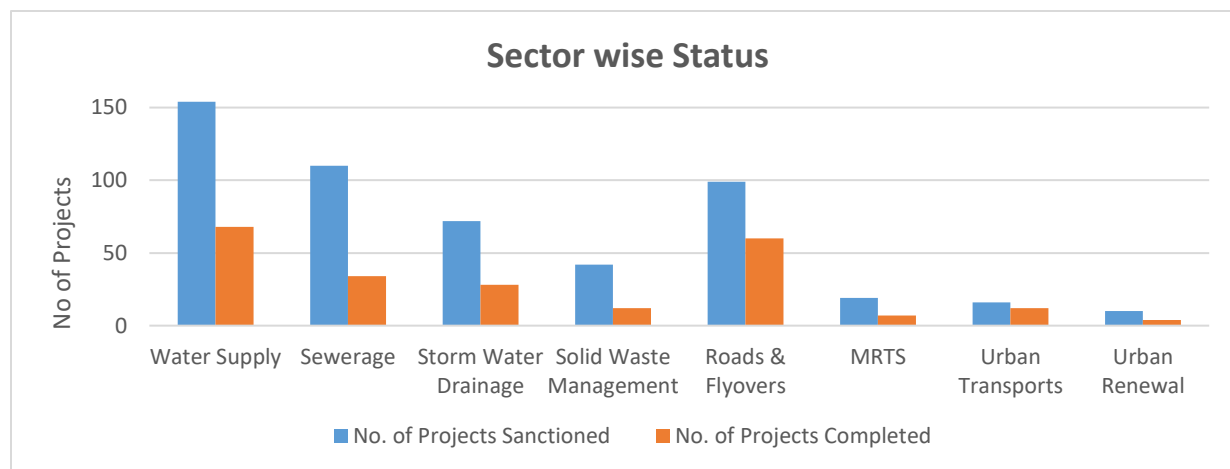
Source: <http://jnnurmmis.nic.in>

13.2 City Development Plan (CDP)

CDP is a multi-stage process. First, demographic, economic and infrastructural aspects of the place are studied. Based on this study, a vision for the city is created and a plan is created in line with the vision. Most important aspect of CDP is development is the formulation of City Investment Plan (CIP) and financing strategy to identify the sources of financing and the estimated cost involved in the implementation of the plan.

14 Impact Analysis

JNNURM initiated a plethora of projects in various sectors under Urban Infrastructure and Governance (UIG). The projects were distributed across 8+ sectors. But the major emphasis has been for basic needs like **water supply, sewerage and drainage**. These three sectors alone **constituted 336 projects which are 62% of the projects sanctioned.**

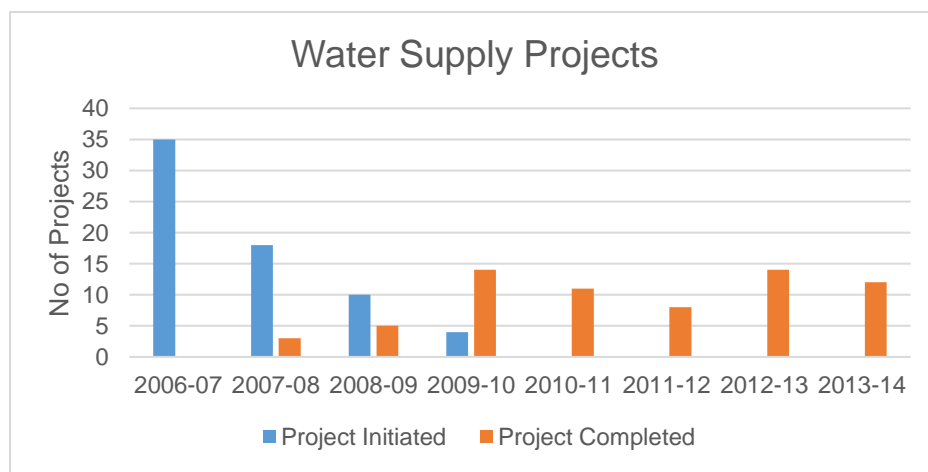


Source: Compiled from JNNURM.nic.in

Selected states like Gujarat, Maharashtra, Tamil Nadu, Andhra Pradesh and West Bengal were major gainers from JNNURM. A speculation of funds being allocated only to these selected states was also raised over the years. Service level benchmarks (SLB) represent the standard performance indicators which are easily understood by all stakeholders and can be related to the effectiveness of the scheme. SLB brought the emphasis on accountability and performance management for many schemes, especially in JNNURM. A total of 28 parameters is defined to measure the effectiveness of JNNURM.

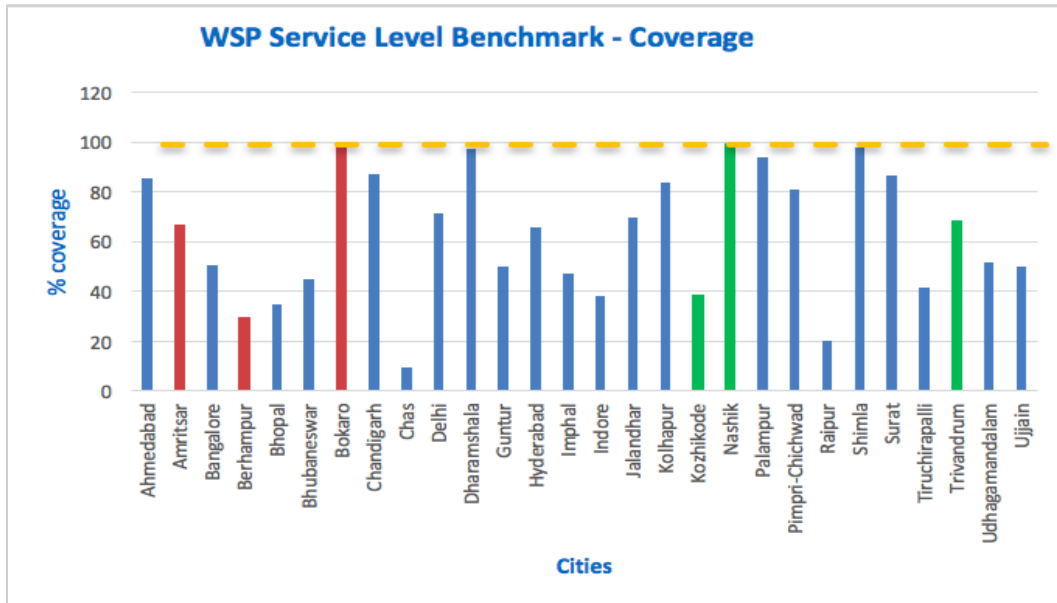
14.1 Effect on Water supply

Water being the major necessity in Urban India, JNNURM and UIG provided enough emphasis on this sector. **A total of 186 projects is approved till date out of which 68 are completed.** All the projects were initiated in the first four years and Implementation started in the following years.



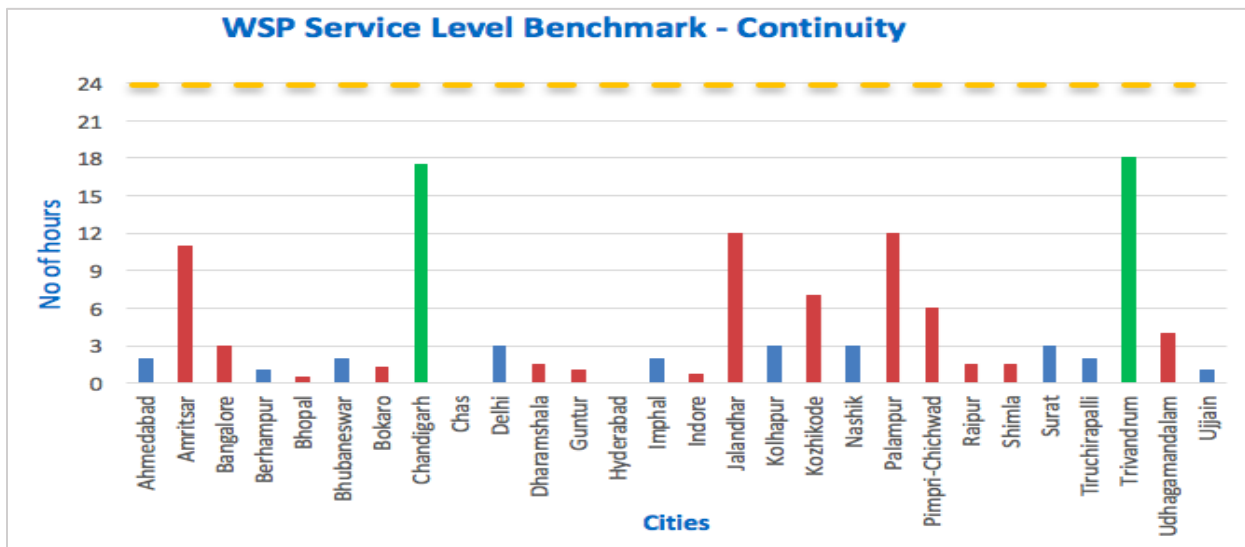
Source: Compiled from JNNURM.nic.in

The projects' health is assessed based on three key parameters namely coverage, continuity and quality of water supply services.



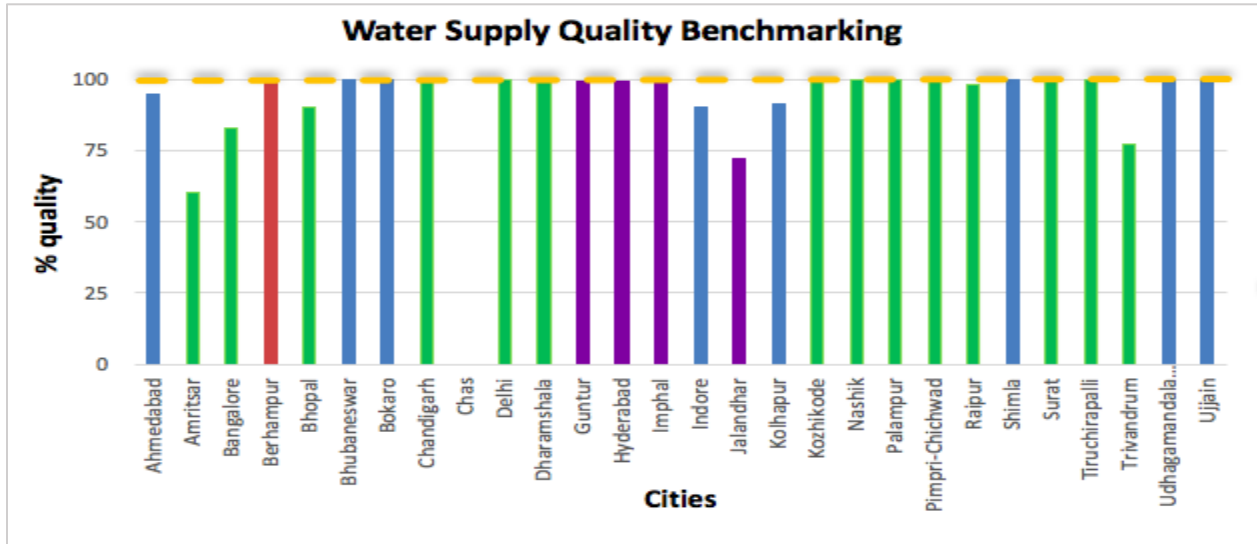
Source: Compiled from <http://www.moud.gov.in>

WSPs have registered **50% coverage as against benchmark value of 100%** in almost 75% of the cities where JNNURM is implemented. Most of them even recorded >80% coverage. Kerala is the **only state to have highly reliable data** in comparison to the intermediate level of reliability elsewhere.



Source: Compiled from <http://www.moud.gov.in>

Continuity refers to **the number of hours’ of continuous water supply provided to the public** in a day. The ideal **benchmark being round the clock (i.e 24 hours)**, **none** of the city provides **even 12 hours** of continuous water supply, except Chandigarh and Trivandrum where it is almost 18 hours of continuous water supply. Various reasons being the lack of availability of water, inter-state water dispute. This exposes the weakness of JNNURM when it comes to service level implementation and very poor ROI in terms of benefits and money spent (explained later in cost recovery part).

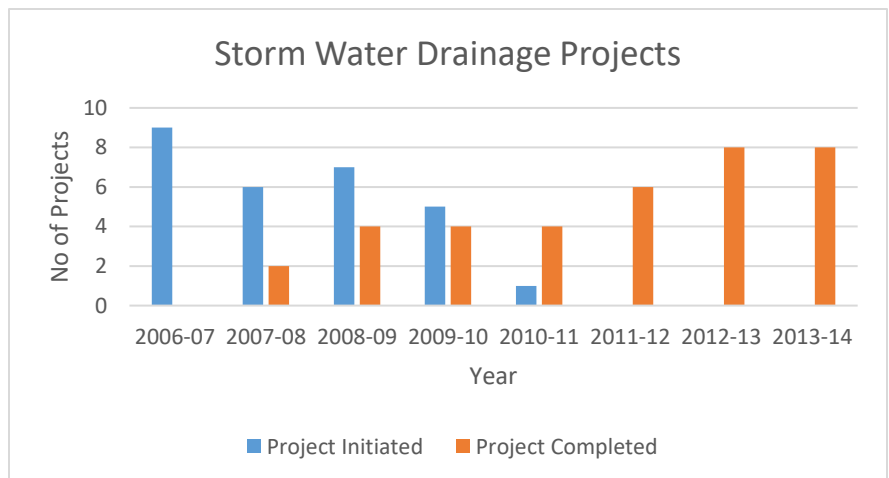


Source: Compiled from <http://www.moud.gov.in>

Irrespective of low service levels, WSPs stand out in one indicator – **quality of water supplied**. The **benchmark level of 100% is achieved** by many cities and the **data are also reliable**.

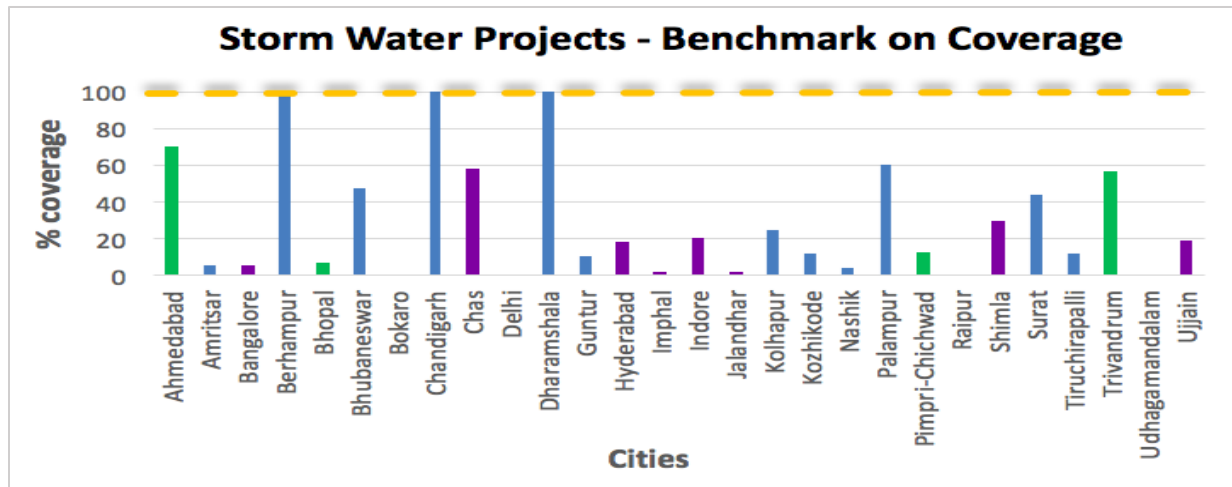
14.2 Effect on Storm Water Drainage

Most of the diseases spread due to stagnation of water in roads during rainy days. With a huge population growth in Urban India, storm water drainage facility became a mandatory facility. In total, **76 projects were approved across 5 states by UIG**, out of which **29 projects as completed** as of 2014.



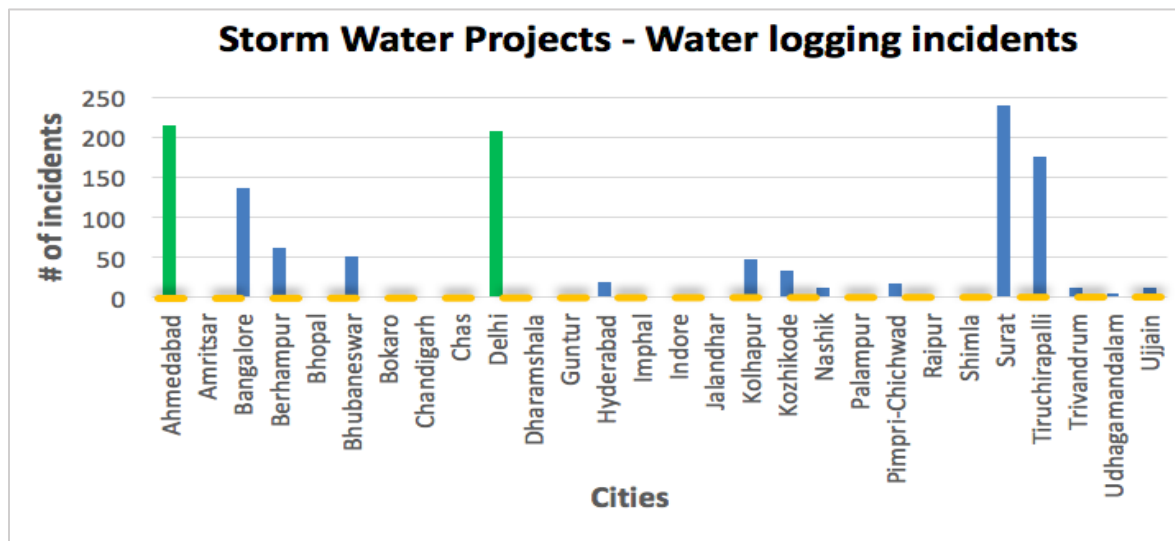
Source: Compiled from JNNURM.nic.in

The parameters governing the SWD projects are coverage and incidence of water logging/flooding.



Source: Compiled from <http://www.moud.gov.in>

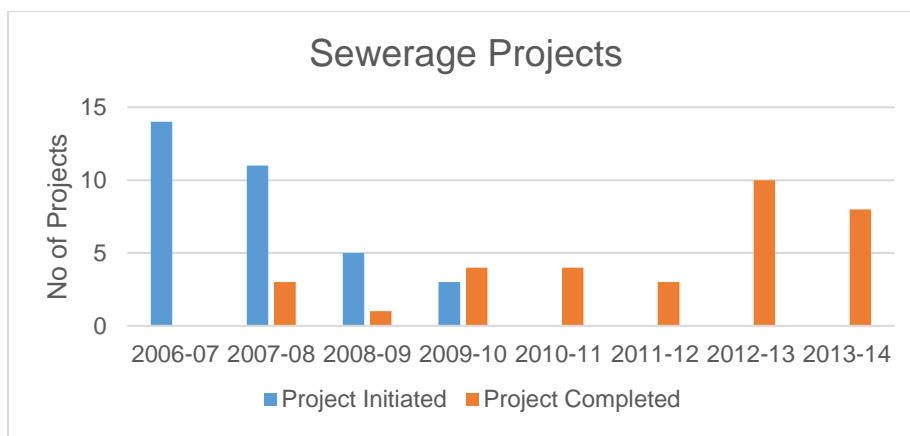
A key observation is that Tier 2 cities have excelled in preventing the number of storm water logging incidents (graph below) compared to Tier 1 cities like Delhi, Bangalore, Surat, etc. A comparison of both the graphs indicates the disparity and poor quality in terms of implementation of storm water projects across states. For instance, Ahmedabad has registered a number of flooding incidents despite having a coverage of 70%.



Source: Compiled from <http://www.moud.gov.in>

14.3 Effect on Sewerage

Urban population has a huge problem of sewerage. Next to drinking water, this is the issue Government of India focused heavily on. Again a huge number of 122 projects were approved by UIG and the implementation started in 2007-08 itself.

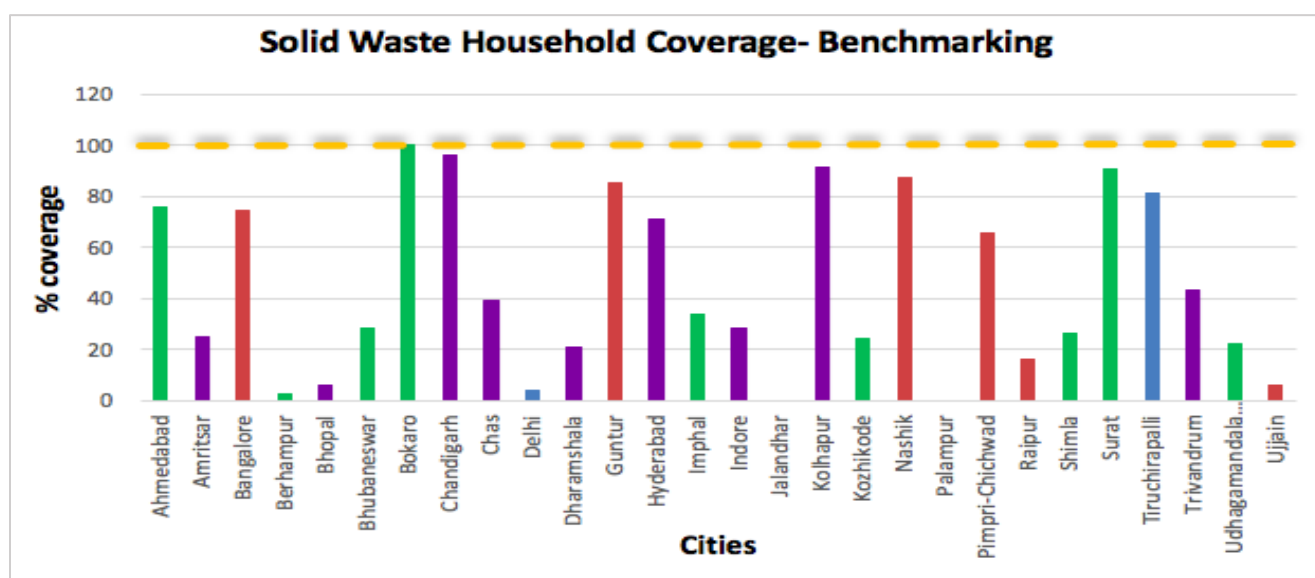


Source: Compiled from JNNURM.nic.in

Fund Allocation and completion progress summary for Water Supply, Sewerage and Storm water drainage is tabulated below.

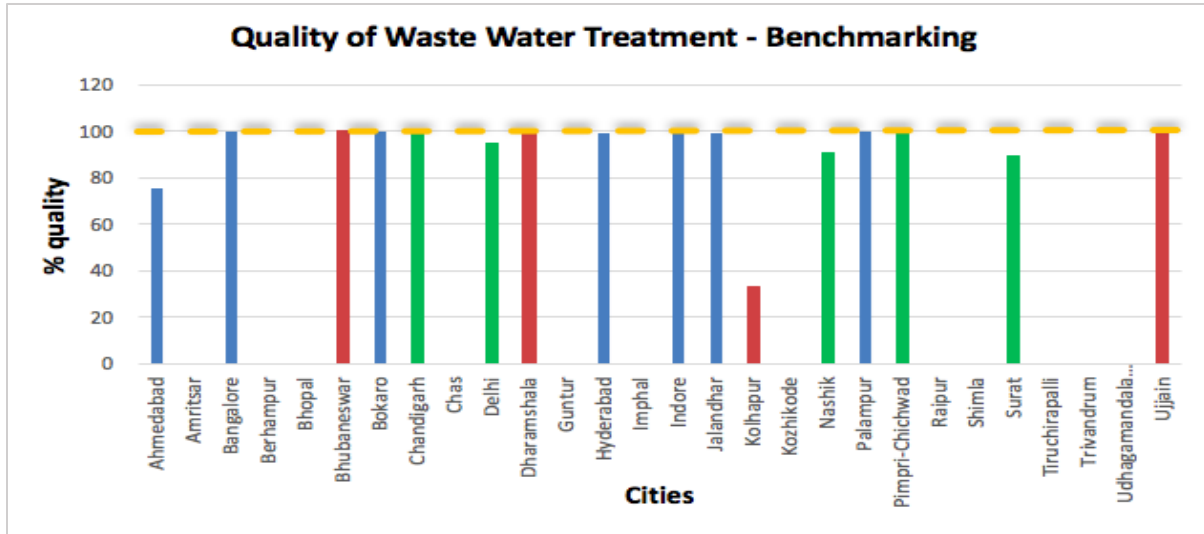
Sector	No of Projects Sanctioned	No of Projects Completed	Approved Cost	ACA Committed	ACA Released
			(Rs in lakhs)		
Water Supply	186	68	2249379	277612.81	808644.82
Sewerage	122	35	1576434	755486.21	517831.22
Storm water Drainage	76	29	836553	342454.58	277612.81

Source: Compiled from JNNURM.nic.in



Source: Compiled from <http://www.moud.gov.in>

The **coverage of sewerage projects** is slightly better compared to storm water drainage projects. It can be inferred from the graph that **western states** are more easily accessible for ground level surveys (**high reliability**) while it is difficult to gather such surveys in **southern states** (**low reliability**).



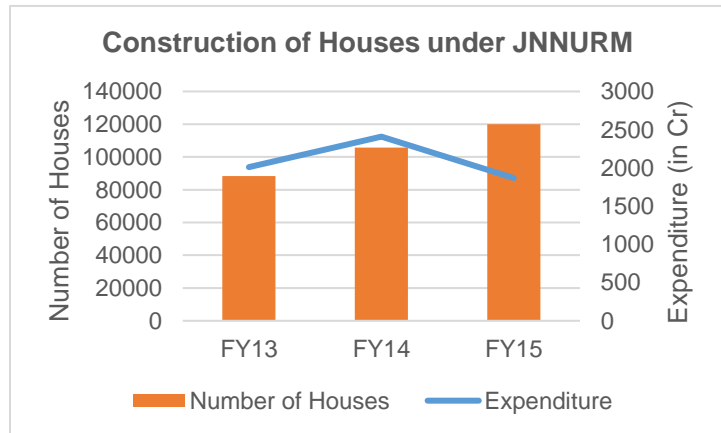
Source: Compiled from <http://www.moud.gov.in>

In line with the water supply projects, when it comes to quality, the service levels are almost up to benchmark points in case of waste water management.

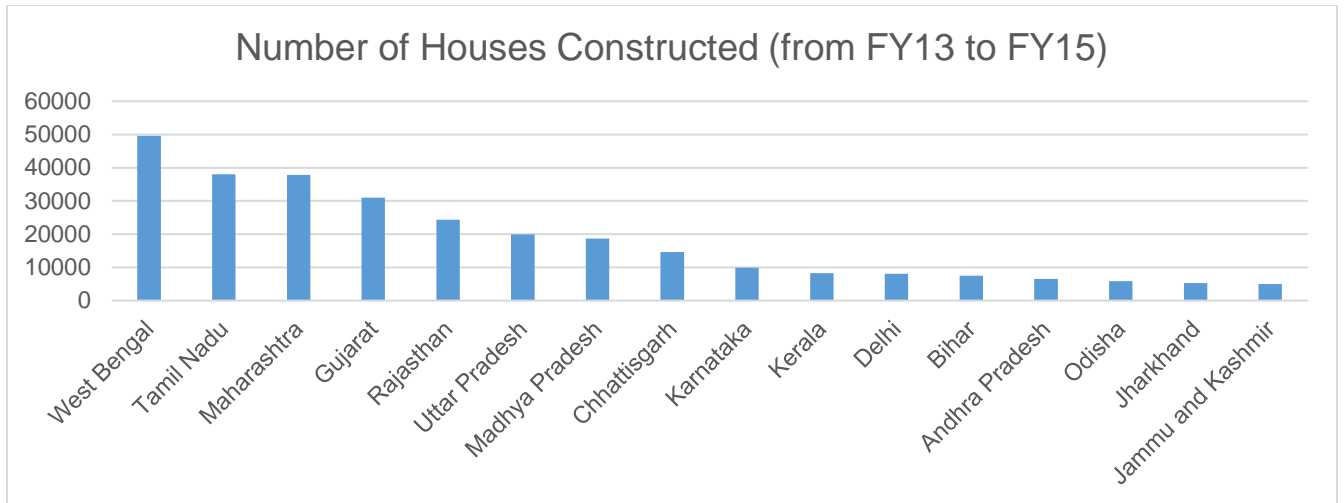
14.4 Effect on Housing

For housing in urban India, funds from JNNURM and Rajiv Awas Yojana (RAY) are being utilized. The following graph shows the amount of expenditure incurred towards urban housing under these schemes and the corresponding creation of houses.

It can be seen that the more and more houses are being constructed under the scheme. These houses are constructed in larger numbers in industrialized states like Gujarat, Tamilnadu, West Bengal etc as shown in the following figure.

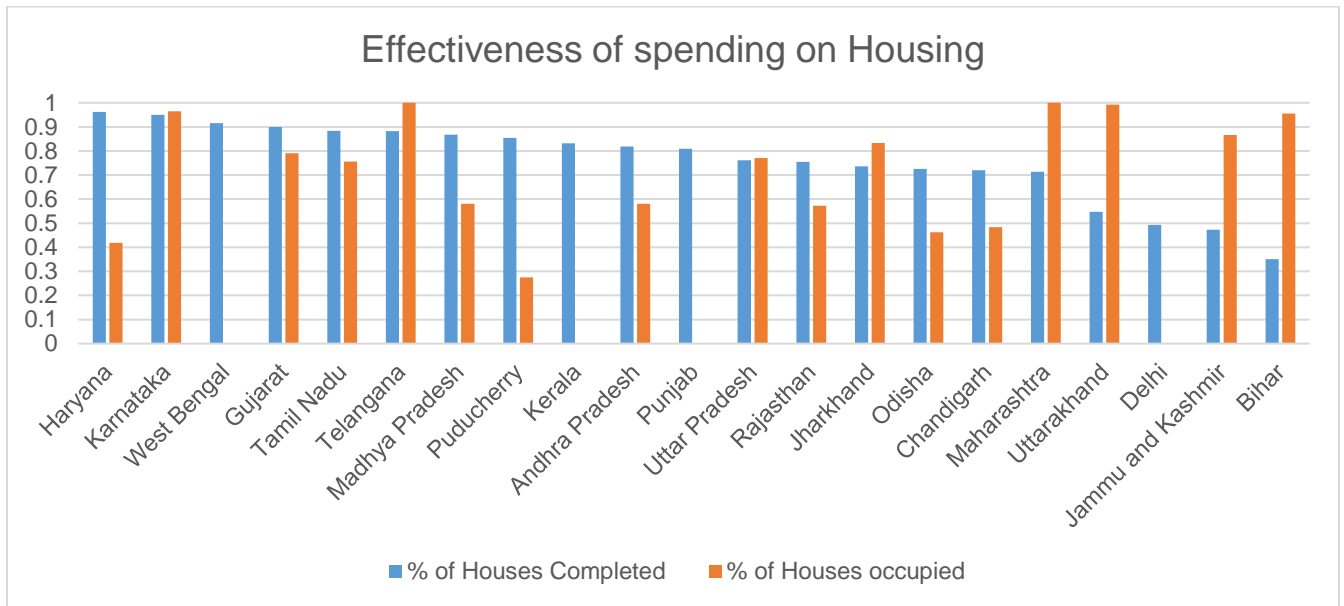


Source: <http://jnnurm.nic.in/>



Source: <http://www.indiastat.com/>

To analyze the effectiveness of the spending on housing, % of houses completed out of houses sanctioned and % of houses occupied out of the % of houses completed are used. It can be seen from the following figure that the states like Haryana, Karnataka, Maharashtra and Tamilnadu had very high % of completion. Although the states like Haryana, Madhya Pradesh and Puducherry had high % of completion, their occupancy levels are very low. This creates the question of the quality of the houses being constructed in those states. Further research has to be done to analyze the reason behind the low occupancy levels. On the other hand, states like Telangana, Maharashtra and Uttarakhand have high occupancy levels.



Source: <http://www.indiastat.com/>

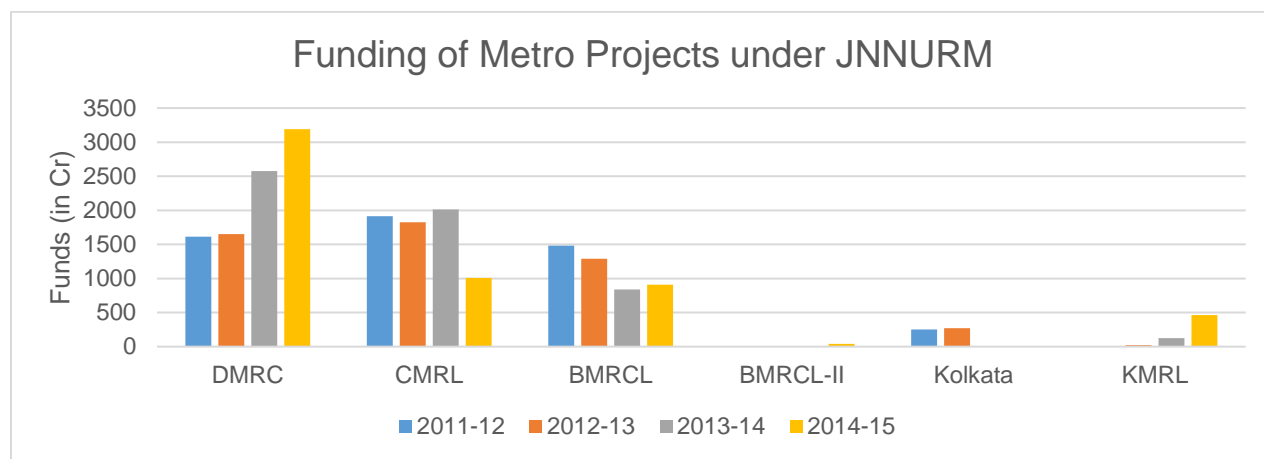
14.5 Effect on transportation

JNNURM fund under road development is used for the construction of roads, flyovers, MRTS and other urban transport mechanisms. As of 2013, the number of projects sanctioned and completed is shown in the following table.

Sector	Sanctioned Projects	Completed Projects
Roads & Flyover	99	60
MRTS	19	7
Other Urban Transport	16	12

Source: <http://jnnurm.nic.in/>

The following graph shows the funds allocated to various metro schemes in India under JNNURM.



Source: <http://www.indiastat.com/>

In road transport, JNNURM funds are being utilized for buying buses, completing projects under Bus Rapid Transit System (BRTS). The following table shows the funds released for buying buses all over India.

Funds released (In Cr)	2011-12	2012-13	2013-14	2014-15
Funds released for Buses	188.34	154.45	45.1	884

Source: <http://www.indiastat.com/>

The following table shows the amount of expenditure on Bus Rapid Transit system, introduced for improving the urban transport in the country.

City	FY12-14 (In Cr)	Physical Progress (% completed)
Pune	163.08	60%
Amritsar	61.94	47%
Surat	58.63	100%

Ahmedabad	58.09	95%
Vishakhapatnam	56.62	76%
Bhopal	40.07	85%
Jaipur	25.17	72%
Indore	19.46	100%
Vijayawada	18.88	70%
Rajkot	8.25	100%

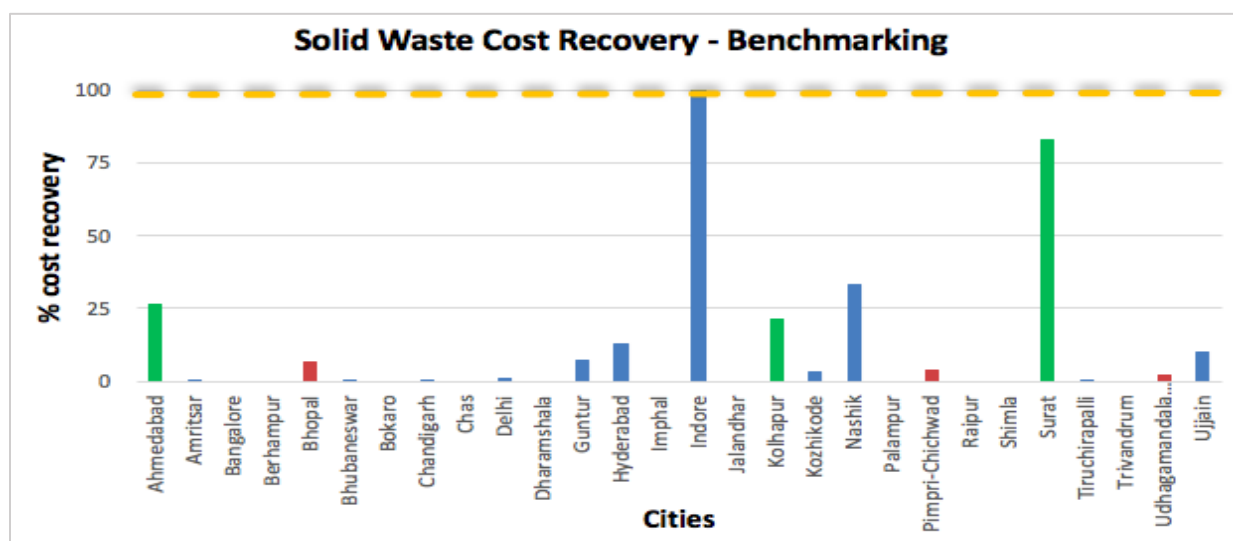
Source: <http://www.indiastat.com/>

14.6 Effect on solid waste management

The following table shows the state wise distribution for solid waste management in the year 2015.

State	Approved Cost (In Cr)	Funds Released (In Cr) in 2015
Gujarat	41.72	5.21
Jammu and Kashmir	91.97	20.69
Madhya Pradesh	35.88	7.17
Punjab	97.85	12.23

Source: <http://www.indiastat.com/>



Source: Compiled from <http://www.moud.gov.in>

Solid waste projects are a clear contrast to water supply projects, as the **cost recovered** out of these projects are **on average nil**. This might be one of the possible reason for the lukewarm implementation of these projects in various cities.

15 Issues in JNNURM

On studying NHM, we have seen that scheme has been successful in providing the housing facility to the urban poor. Although the scheme is effective in large and metropolitan cities, it is not

implemented successfully in mid and small cities. This is because the model that is sustainable in large cities is not sustainable in small cities. Following are the issues concerning JNNURM –

- In JNNURM, the planning and approval require the involvement of various department concerning land, labour etc. Once there is no co-ordination across the various department, the implementation of the scheme becomes difficult.
- There is no community participation in the scheme. Slum people and NGOs are not involved in the planning phase of these projects. There are also issues of people being displaced out of slums and rehabilitated in far-away places. Ex: Telibhanda slum
- The scheme also suffers from the lack of transparency in terms of rehabilitation and resettlement of the slum people.
- There are no perfect tangential measures to analyze the performance of schemes in water supply, storm water and waste water treatment.

16 Conclusion

On analyzing the different schemes like NREGA, NHM and JNNURM, we have observed that some states are very good in implementation whereas some states are not so good in implementing the government schemes. Finally, everything boils down to the institutions that have been set up to implement these schemes. It is also evident by now that a single model will not be suitable for a country like India that has varied demography, economic and political conditions. In light of these, we propose the following recommendations while setting up the institutions for effective implementation.

16.1 Bottom-up planning

So far, in most of the schemes, the planning is done by Central and State governments. District and block administration are primarily used for implementation purposes only. In this kind of structure, proper and specific inputs for project planning are not being considered. Hence, the planning has to be bottom-up where district administration has to be included in planning phases for effective inputs and to resolve the future problems. This kind of structure will provide more responsibility and accountability to the District administration. In turn, the efficiency of the government schemes will also be improved.

16.2 Integrated Planning

In schemes like JNNURM, an integrated planning approach, i.e. including all the stakeholders in the planning phase, has not been followed. It is necessary to include all the stakeholders like non-governmental organizations in the planning phase. In the JNNURM, an integrated planning will help in the reduction of urban poverty in the small cities.

17 References

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18 Appendix

State	Funds Availability (In Cr)			Expenditure + Liability (In Cr)			Net Balance (In Cr)		
	2013-14	2014-15	2015-16	2013-14	2014-15	2015-16	2013-14	2014-15	2015-16
ANDHRA PRADESH	534479	304072	309414	533034	289256	462850	1445	14816	-153436
ARUNACHAL PRADESH	15509	6804	12723	10396	3882	13958	5114	2922	-1236
ASSAM	77088	58681	65232	70209	52169	86536	6879	6512	-21304
BIHAR	225138	154905	156726	222268	126908	201729	2869	27998	-45002
CHHATTISGARH	221461	178253	128389	203815	176053	133622	17646	2201	-5233
GOA	221461	567	435	203815	458	306	17646	108	129
GUJARAT	663	35951	38496	299	47703	43727	364	-11752	-5231
HARYANA	47803	21589	14453	49288	21891	17213	-1486	-302	-2760
HIMACHAL PRADESH	44079	41916	40026	38536	41167	40595	5542	750	-569
JAMMU AND KASHMIR	59684	46816	79035	56876	43148	114451	2808	3667	-35416
JHARKHAND	87018	89151	103567	81166	104396	138356	5852	-15245	-34789
KARNATAKA	98791	195513	131422	92182	169731	187169	6609	25782	-55747
KERALA	204486	164263	161082	213386	162431	149088	-8899	1831	11993
MADHYA PRADESH	132096	269400	277615	131113	283786	254767	983	-14387	22847
MAHARASHTRA	245349	162858	186408	259210	162878	189908	-13860	-20	-3500
MANIPUR	154417	28799	29552	129136	26782	23232	25282	2018	6320
MEGHALAYA	30180	32111	26816	25577	31430	35783	4603	681	-8967
MIZORAM	30745	11423	29904	33901	11420	29859	-3156	3	45
NAGALAND	26044	17926	24353	26072	15789	56602	-28	2137	-32249
ODISHA	32438	111098	205911	34632	109114	211248	-2195	1983	-5338
PUNJAB	136500	21538	32232	130293	21543	35996	6207	-5	-3764
RAJASTHAN	26270	338642	321092	26721	329484	334606	-452	9158	-13514
SIKKIM	295028	8091	9801	264501	7896	12652	30527	195	-2850
TAMIL NADU	11888	484274	692382	11124	393042	628427	765	91233	63956
TELANGANA	539005	169660	200490	394394	193627	237499	144611	-23967	-37009
TRIPURA	111671	71920	149456	107982	83057	140602	3690	-11137	8854
UTTAR PRADESH	395900	295784	312348	356051	320744	334789	39849	-24961	-22440
UTTARAKHAND	40724	33230	51526	38159	33171	53832	2566	59	-2306
WEST BENGAL	382446	400886	538546	389142	418840	554239	-6697	-17955	-15692
ANDAMAN AND NICOBAR	2002	1444	1062	1793	1310	637	209	135	426
DADRA & NAGAR HAVELI	0	0	0	0	0	0	0	0	0
DAMAN & DIU	0	0	0	0	0	0	0	0	0
LAKSHADWEEP	113	99	45	74	72	31	39	27	15
PUDUCHERRY	1858	975	1429	1137	650	922	721	324	507
Total	4432334	3758638	4331967	4136280	3683829	4725227	296053.2	74809.45	-393260