RAPID ASSESSMENT OF NATURAL RESOURCE MANAGEMENT COMPONENT UNDER MGNREGA AND ITS IMPACT ON SUSTAINABLE LIVELIHOODS

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Rapid Assessment of Natural Resource Management Component under MGNREGA and its impact on Sustainable Livelihoods

Executive Summary

Introduction

The service led growth process witnessed in India for several decades has meant that the pattern of income generation has changed considerably away from agriculture in favor of services sector, yet agriculture and allied sectors continue to employ close to half of the labour force. While open unemployment rate is not high, underemployment has prevailed extensively. In order to spread the benefits of growth process widely, several measures aimed at generation of employment opportunities for the rural poor and vulnerable groups have been adopted by the Government. Named differently under different regimes, these programmes have primarily aimed at providing the rural poor with wage employment opportunity through community works. The programmes went through a paradigm shift in early 2006 with the National Rural Employment Guarantee Act (NREGA or renamed later as MGNREGA after Mahatma Gandhi) which had several legally binding provisions including a guarantee up to 100 days of work a year on demand to every rural household willing to do unskilled manual work.

Covering 685 districts of the country, the programme generated 235.76 crore person days of employment for 7.67 crore individuals in FY 2016-17. More recently, Natural Resource Management (NRM) has been an important component of MGNREGA to promote sustainable livelihoods for the poor. About 60 percent expenditure has been allotted for the creation of natural resource assets (both community and individual assets) in FY 2016-17. While several evaluation studies have been conducted on issues such as extent of job demand, wage income generation, social protection and safety net aspects of MGNREGA, impact of the recent focus towards the NRM component has not yet received adequate attention from the research community.

Objective

This study is a rapid assessment of the performance of the NRM component of MGNREGA in 30 districts spread over different agro-climatic zones in 21 states during 2015-16 and 2016-17. More specifically, it aims at understanding the following:

- Impact of assets created in the programme on household welfare by examining income, crop productivity, livelihood opportunities and related variables
- Environmental and non-tangible benefits.
- Extent of migration before and after the programme was undertaken.
- Assess household perception on the quality of individual and community assets created in the programme and their maintenance.
- The process of planning involved for NRM activities and implementation
- To check the extent of consolidation of village level plans with those of district and block level, mechanism of internal quality management and transparency of MGNREGA works.

Survey Coverage and Tools

We study the above objectives by means of data collected through a survey conducted in 30 districts spread over 21 states and 14 agro-climatic zones. A total of 1200 (40 from each district) beneficiary households of MGNREGA assets have been covered through a structured questionnaire. The selection of districts was based on NRM expenditure on natural resource management component per MGNREGA worker. The districts having per capita expenditure close to the average per capita expenditure in their respective agro-climatic zone were selected. This primary criterion was also supplemented by extent of urbanization and cropping intensity. Districts having high rate of urbanization and high cropping intensity were not selected for the study since pilot survey indicated low demand for NRM-MGNREGA works in such districts.

We planned to select 4 blocks in each of the selected districts having the highest expenditure on individual asset creation and gram panchayat (GP) from each block considering factors such as number of NRM assets, accessibility, terrain, and weather condition. But, two or three blocks were selected in a few cases because individual NRM component was nearly absent in other blocks. Finally, 112 blocks and 156 GPs have been covered.

The methodology for assessing the sustainability of livelihood mainly involves direct interaction with beneficiaries of individual and community assets through a structure questionnaire. Focus

group discussions were also administered at village community to understand the NRM work process and benefits from the assets created. Moreover, to understand the benefits of MGNREGA holistically from the perspectives of different stakeholders, one-to-one interaction guided by a semi-structured questionnaire was also conducted to extract information from officials involved in NRM at village, block, and district level.

Impact analysis is based on comparison of various dimensions before and after creation of the assets during the reference period. Being a rapid assessment survey of the NRM component, the sample of districts and blocks may not represent the entire spectrum of MGNREGA activities and the impact of such activities for the rural economy. It broadly represents the average picture of beneficiaries of NRM individual and community assets in those districts where per worker fund availability was around the average level during the reference period.

Socio-economic characteristics of the selected 1200 beneficiary households

- 85.2 percent were BPL card holders.
- 27 percent of sampled households were beneficiaries of Prime Minister Awas Yojna (PMAY).
- 31 percent of households were Scheduled Castes and 11 percent Scheduled Tribes.
- Average household size was of 6 members.
- In 14 percent households, members were illiterates and another 8 percent were literate without a formal educational qualification. At least one person in the house studied up to 12^{th} standard or more in about a third of the households.
- Occupation: Small and marginal farmers constituted 65% of the sampled households and another 25.6% reported wage labour as their major source of income.
- Average land size was 2 acres and there was very little change in land size across districts reflecting a thin land market.

Benefits of NRM Assets

The beneficiary households reported several types of benefits being derived from the NRM assets created in MGNREGA. Increase in irrigation potential was reported as the prime benefit from the creation of community assets. Both individual and community assets beneficiaries experienced increase in ground water table. Similarly, NRM assets have helped small and

marginal farmers to improve livelihood opportunities. Besides, a significant proportion of household beneficiaries found that access to water for livestock has increased. These are important factors contributing to sustainability of rural livelihood of small and marginal farmers. Overall, it can be said that both individual and community assets are helping the rural community in certain important aspects that contribute towards sustaining and improving livelihoods.

Determinants of Individual asset participation

There has been greater emphasis on individual assets in recent years, though community assets remain important. Considering the importance of individual asset creation, an attempt was done to find out the different factors which can have an impact on the participation of households in creating an individual NRM asset. It was found that household's BPL status, house floor (Kutcha), migration, land holding, per capita income and primary education are the factors which show significant positive impact on the likelihood of individual asset creation under MGNREGA.

Agricultural Productivity Growth

Participants in NRM assets reported a productivity growth of about 12% for rice and wheat, 16 to 17% for bajra, maize, pulses and oilseeds during the post-assets creation period compared to pre-assets creation period. The largest increase of 28% is reported for vegetables. These are obviously considerable productivity gains for the small and marginal farmers benefiting from the NRM assets.

Household Income

The respondents reported that per household income from agriculture and allied activities increased by 15% from Rs. 52,600 before assets were created to Rs. 60,600 after the assets were created. MGNREGA wage income fell marginally from Rs. 9,700 to Rs. 9,600, but non-MGNREGA wage income rose from Rs. 18,100 to Rs. 19,300. Agricultural income, non-MGNREGA wage and MGNREGA wage were the three major sources of income for the households in that order and together contributed to 94% of total income. On the whole, household income increased from Rs. 85,500 to Rs. 95,000 indicating a rise of 11% for the NRM beneficiaries.

NRM assets creation as an intervention has helped households in increasing the level of income by improving the productivity of land and also through diversifying income sources. It is estimated that a one per cent increase in cereals productivity leads to income rise by 0.27 per cent. As an intervention, MGNREGA though NRM assets provision has come out as a solution to beneficiaries for improving their livelihoods and not just another employment scheme to transfer payments.

Migration

Seasonal migration in search of jobs is a normal feature for some low-income households in rural areas. Considering all 30 districts taken together, 18 percent of NRM beneficiary households reported migration with a range varying from 8% in Mahendergarh (Haryana) to 40% in Nainital (Uttaranchal). The percentage of migrating households fell in 6 of the 30 districts covered in the survey, the highest being 10% for Jalna in Maharashtra. In the other 24 districts, percentage of migrating households did not change. While assessing the determinants of migration, it was also found that households who have diversified their income sources are 57.5 percent less likely to migrate. Credit and household size were found to be positively associated in inducing migration. Households belonging to low income group are more likely to migrate in comparison to households belonging to high income group.

Quality of Assets from Users' Perspective

Though there are technical aspects to assess quality of assets, we have attempted to get the users' perspective on how they view the quality of assets created on individual and community land. Surprisingly, as many as 76% households thought quality of assets when created was good or very good in contrast to common perception about public works programmes. Moreover, 58% of respondents thought assets quality remained same after they were created. But, 18% of respondents reported that that the quality of assets had deteriorated. Another interesting response was that 73% of respondents indicated that they were actively involved in maintenance of assets created on individual land.

Water Table

Water table rise has been felt as a major ecosystem gain by the respondent households with as many as 78% of respondents reporting gain after construction of the NRM assets. The

percentage varies from 30% in Muktsar (Punjab) and 45% in Chhatarpur (Madhya Pradesh) to 95% in Maharajganj (Uttar Pradesh), Neemuch (Madhya Pradesh) and North Tripura (Tripura). While this study does not relate to a technical evaluation of water table, the villagers predominantly perceive the benefits on long term sustainability of the agricultural activities.

Sustainable Resource Index

An attempt has been made to create a 'Sustainable Resource Index' (SRI) to rank selected districts on the basis of change in resource sustainability. The index is based on four indicators: increase in water table, improvement in availability of drinking water, enhancement in quality of land and maintenance of assets by households. As per the index, it has been ascertained that five districts namely Kanchipuram, Satara, Jalna, Kolar and Rajnandgaon are high on sustainable resource index indicating NRM assets have benefited households in improving the natural resource base. It is found that sustainability increases with increase in NRM expenditure up to a certain level and has a tendency to fall thereafter. The turning point seems to be Rs. 6000 per MGNREGA worker.

Conclusions

On the whole, the NRM component of MGNREGA has introduced substantial changes in the MGNREGA operations. There has been greater emphasis on individual assets in recent years, though community assets remain important. Its impact on productivity, income, migration, new activities is noticeable within a short span of 2-3 years. These assets have increased agricultural productivity and income of rural households and have been helpful in creating certain non-tangible benefits as well. The quality of assets on individual land is perceived to be better than the assets created on community land and households are paying attention to maintenance of assets created on their own land.

When productivity aspects do not get priority, expenditure on public employment programmes are basically seen as transfer payments which are needed for certain groups in the society. But, productivity aspects cannot be neglected in large scale public employment programmes such as MGNREGA. Seen from this angle, the emphasis on NRM is a welcome move that attempts to strike a balance between growth and distribution objectives of development.

Chapter 1

Introduction

1.1Background

The size of Indian economy has grown considerably during the last six decades leading to several fold increase in per capita income of the population. One feature distinct in the Indian growth story is that while composition of the national income changed rapidly in favour of industry and services, the pattern of employment has changed very slowly. The agricultural sector continues to employ as much as 48% of the labor force, even though it accounts for only 17% of the national income. Although open unemployment rates are not high, underemployment has prevailed extensively. As a result, India accounts for the largest number of poor in the world even after graduating some years ago to the 'lower middle income' category by the World Bank classification.

In order to spread the benefits of growth process widely, several measures have been adopted by Government of India which have directly focused on the creation of employment opportunities in rural areas. Named differently under different regimes, these programmes have primarily aimed at providing the rural poor with wage employment opportunity for a certain number of days in a year. Included among such programmes are National Rural Employment Programme (NREP) Rural Landless Employment Guarantee Programme (RLEGP), Jawahar Rozgar Yojana (JRY), Employment Assurance Scheme (EAS), Sampoorna Grameen Rozgar Yojana (SGSY) and National Food for Work Programme (NFFWP). Primary objective of these programmes was to provide wage employment to the rural poor and vulnerable sections of the country who were unable to get assimilated into the mainstream of the development process.

The public employment programmes in India saw a paradigm shift in design with several legally binding provisions and coverage in early 2006. The rights based approach to employment was adopted with a guarantee up to 100 days of public work in a year to each household willing to undertake manual unskilled work. The then prevalent SGSY and NFFWP were merged and launched as one under the National Rural Employment Guarantee Act (MGNREGA which was later named after Mahatma Gandhi and called MGNREGA). It was notified in 200 rural districts in its first phase of implementation with effect from February, 2006. It was further extended to

an additional 130 rural districts in 2007-08. All the remaining districts were notified with effect from April, 2008 and thus extending the programmes coverage to the entire nation.

Intervention by Government to create jobs is not new. As employer of the last resort, governments have adopted various employment generation schemes in both developed and developing countries as per changing need of the society. History documents that some of the forts and other monuments in India were built during years severely affected by drought to provide employment to the poor. Great Britain had passed the Poor Employment Act as early as 1817 for providing limited public works including fisheries. Of late, it introduced in 2011 the Work Programme which involved payment for result oriented innovative programmes delivered by private, public and voluntary organisations which support people who are at risk of becoming unemployed for long-term. It replaced previous programmes such as the New Deals and Employment Zones. The Federal Government in the USA introduced the New Deal involving support for farmers, the unemployed, youth, and the elderly during the 1930s in response to the Great Depression.

Several employment programmes undertaken in India have been mentioned above. One of the public works programmes in India that attracted wide attention is the Employment Guarantee Programme (EGS) of Maharashtra which started in 1979. It was the largest state sponsored labour intensive public works programme to provide gainful and productive employment to the rural poor who are willing to do unskilled manual work. EGS was then unique in terms of its design and execution. The work involved irrigation projects, percolation and storage tanks, soil conservation and land development works, afforestation and social forestry, and village roads etc. The most important characteristics of EGS of Maharashtra were (a) it was demand driven with a promise to provide work to all those who were willing to work, (b) self-target nature of work in the sense that only poor people willing to do manual work will register for it and (c) its universal applicability to ensure access to the marginalized, SC, ST and women. Though the EGS aimed at creation of productive durable assets for rural development, it has often been criticized on the ground that it built roads that got washed away by the first rain. Despite this, most evaluators agreed that EGS provided employment when farm and non-farm employment from normal economic activities were inadequate and helped the poor to varying extent by augmenting their income. (See, Hirway, 1988; Bhende, 1992; Dev, 1995; Bagchee, 2005; Gaiha,

2005; Shah, 2008 among others). Some of the features of MGNREGA are similar to those of the Maharashtra EGS.

1.2 Salient Features of the MGNREGA Act

The salient features of the scheme are the following:

1. Introducing a right based framework, MGNREGA provides a guarantee up to 100 days of work on demand to every rural household willing to do unskilled manual work in a financial year. The Act thus has universal coverage so that the marginalized groups are not left out in the selection process of beneficiaries.
2. A job card should be issued by the Gram Panchayat to an applicant for work and employment should be provided within 15 days of application; otherwise, the act made a provision for unemployment allowance to be paid in a time bound manner.
3. A 60:40 ratio is needed to be maintained for wages and materials requirement for the work. Notably, deployment of contractors and machineries were strictly prohibited.
4. The Act specifies that wage rates in different states were to be notified by the Central Government and that equal wages were to be paid to both men and women.
5. Wages are to be paid according to piece rate or daily rate. Disbursement of wages has to be done on weekly basis and not beyond a fortnight in any case.
6. Work should be provided within a radius of 5km from the village and worksite facilities (like Crèche, drinking water, first aid and shade) should be provided.
7. The Act also aims at women empowerment by specifying that women should constitute at least one-third of the total workers.
8. Proactive disclosure was introduced through Social Audits and Grievance Redressal Mechanism. Social audit was to be carried out by the Gram Sabha. More importantly, all accounts and records relating to the scheme should be available for public scrutiny. Muster rolls should be maintained at the worksites. Wage payments should be through accounts in Bank or Post Office for transparency and accountability.
9. Permissible works predominantly include water and soil conservation, irrigation, afforestation and land development works.
10. A shelf of projects for a village is to be recommended by Gram Sabha and approved by the Zila Parishad.

11. The responsibility of providing work of 100 days to those who demanded work under MGNREGA lies with the State governments, while the Central Government bears 90 percent of the cost (100 percent of wage bill for unskilled manual work and 75 percent of material cost of the scheme including payments of wages to skilled and semi-skilled workers). The State Governments bears the remaining 25 percent of material cost amounting to 10 percent of the total cost.

1.3 Current Status

The MGNREGA programme has been running since 2006 with extension to all 685 districts in 2008 offering wage employment up to 100 days to rural unskilled laborers. The financial year 2016-17 witnessed creation of employment of 235.76[1] crore person days for 7.02 crore active job card holders. Total expenditure in 2016-17 was 58526.75 crore on 168.74 lakhs of total works (completed work was 66.34 lakh and on-going work was 102.4 lakh). The expenditure on wages was 40793.63 crore while rest was for material cost. About 60 percent of expenditure was allotted for the development of natural resource assets on both community and individual land in 2016-17 increasing from 48 percent in 2013-14. More importantly, 65.88 percent expenditure has been on agricultural and agriculture allied works in 2016-17 which increased from 48 percent in 2013-14.

MGNREGA involves a considerable sum of expenditure towards employment of rural poor for creation of sustainable assets that generate extra income for the poor and other low income sections. There are far reaching consequences of such an intervention in rural sector and several evaluation studies have been conducted to examine impact of MGNREGA on wage income generation, demand for public work, social protection and safety net, financial and muster rolls issues, migration, gender issues etc. A few regional studies have also been conducted to capture the impact of natural resource management (NRM). In spite of the fact that NRM, particularly on individual land, has been an important component of MGNREGA, very few studies are available which have examined impact of creation of such assets on private land.

The present study is focused on assessing the impact of NRM of both community and individual owned assets created under the MGNREGA scheme on livelihoods of rural people. It examines

[1]MGNREGA: official website, Government of India, http://mnregaweb4.nic.in/netnrega/all_lvl_details_dashboard_new.aspx

the impact of NRM assets created by MGNREGA based on a sample survey of households from different agro-climatic zones in India.

1.4 Some studies on NRM in MGNREGA

The primary objective of the MGNREGA is to increase the livelihood security and the level of welfare of the rural poor households by providing up to 100 days of manual work to the rural households. The expenditure under the programme has been of the order of 2.5-3.0 per cent of Central Government budget. Given the large size of the expenditure, questions have naturally been raised on the productivity aspects of the works undertaken under the programme. Since inception, MGNREGA has tried to take up natural resource management activities such as watershed development. However, guidelines provided in 2009[2] has substantially extended the scope of NRM activities in MGNREGA by covering assets creation on individual lands.

To consider some relevant literature in the context of NRM component and livelihood of the rural poor, the study by Esteves *et.al* (2013) revealed that due to the creation of asset in MGNREGA, the ground water levels and soil organic carbon (SOC) content have improved while the soil erosion has reduced in four selected districts in Andhra Pradesh, Karnataka, Madhya Pradesh and Rajasthan. The study further revealed that the adaptive capacities of beneficiaries have increased which ultimately reduced the vulnerability to climate risks of the households in the study area. Tiwari *et.al.* (2011**)** found that households benefited from multiple environmental services such as increase in ground water recharge and water percolation implying the more water storage in tanks or ponds, increased in soil fertility showing increase in crop and livestock production which reduce the vulnerability of the poor.

Kareemulla *et.al.* (2009) note several types of works done by MGNREGA in Anantapur district relating to natural resource management such as farm ponds, tank desilting, earthen field bunds, stone bunding on the fields, bush clearance, plantation, drainage and culvert, weeding of fields. The study revealed that two-thirds of the beneficiaries are farmers. It found that MGNREGA brought down the migration levels and increased in the level of income of the households in the villages. Mishra (2011) have studied the effectiveness of the asset created through MGNREGA in three districts namely Dhar, Jhabua and Rajgarh of Madhya Pradesh. It found that significant changes had taken place in terms water conservation, agriculture, cropping pattern and rural

[2] MoRD,GOI. (2009). *Guidelines for Implementation of works on Individual land under NREGA.*

infrastructure (like bridge construction) on rural poor households of the selected villages (both in individual and community asset creation) through MGNREGA. A good percentage of farmers perceived a positive impact of MGNREGA in improving water conservation across the districts. The study reported cropping pattern and productivity improvement due to the proper water conservation.

Ranaware *et.al.* (2015) conducted one field survey in 20 blocks of Maharashtra in 2014 to assess the impacts of these works created under MGNREGA through a survey of beneficiaries. The study revealed that the highest work has been done on land development on private lands (35 percent) followed by water works on common lands (30 percent), afforestation (6 percent), horticulture (4 percent), and other works (18 percent). It is also observed that the distribution of works is diverse across the districts. The survey also provided evidence that many of the works generated under MGNREGA have created new and substantive additions to the resource base and infrastructure. Majority of respondents positively indicated expansion of cultivated area, irrigated area and cropping pattern, pisciculture, horticulture works. Respondents felt that it provided more control over water and more assured timely and adequate availability of water not only for agricultural and livestock purpose but also for drinking purpose. It is also found that most of the respondents have claimed the availability of water enabled them to increase fish in ponds on private land.

A study conducted by Sambodhi Research and Communication (2013) assessed impact of MGNREGA individual assets creation covering 2381 beneficiaries in 6 selected states. The study concluded that individual assets creation under MGNREGA has contributed to extra income for the rural households. Moreover, it was also found that a good proportion of households stopped working under MGNREGA due to additional income. Listing down the benefits, it was observed that individual assets creation has improved the quality of land which helped in improving their credit worthiness.

1.5 Objectives of the Study

The present study is an assessment of the NRM component of MGNREGS. The objective of the study is to examine the impact of assets created by MGNREGS on the sustainable livelihood of the rural poor. The broad objectives are as below:

1. To outline the process of planning involved for NRM activities and implementation of inter-se priority of NREGS works
2. To understand the impact of community and individual assets in generating additional income to the selected beneficiary households.
3. To assess the irrigation potential generated and whether problem of drinking water has been addressed by water related activities
4. To understand the impact of NRM activities on migration
5. Generation of non-tangible benefits, if any, to the community /individual on account of NRM activities.
6. To review the quality of community and individual assets created in the selected districts.

The reference period to evaluate the impact of the assets related to NRM on rural households for the current study was Financial Year (FY) 2015-16 and FY 2016-17. The study has covered 30 districts of 21 major states falling in 14 agro-climatic zones with 1200 households. The field survey was done through a network of evaluating agencies.

1.6 Sampling and methodology

The study is based on a survey of 30 districts spread over 21 states and 14 agro-climatic zones. A total of 1200 (40 from each district) beneficiary households of MGNREGA assets have been covered through a structured questionnaire. The selection of districts was based on NRM expenditure per MGNREGA worker on natural resource management component. The districts having per capita expenditure close to the average per capita expenditure in their respective agro-climatic zones were selected. This primary criterion was also supplemented by extent of urbanization and cropping intensity of the districts. Districts having high rate of urbanization and high cropping intensity were not selected for the study since pilot survey indicated low demand for NRM-MGNREGA works in such districts. When one agro-climatic region spreads over two or more major states, we have tried to select the districts from each state. Table 1 provides the

list of selected districts along with the per worker expenditure incurred in natural resource management component.

Given the focus of the study on the role of individual asset creation on livelihoods of people, selection of blocks has been done on the basis of expenditure incurred on creation of individual NRM related assets. We had targeted to select 4 blocks in each of the selected districts having the highest expenditure on individual asset creation and one Gram Panchayat (GP)from each block considering factors such as number of NRM assets under community and individual components, accessibility, terrain, and weather condition. But, two or three blocks were selected in a few districts because individual NRM component was nearly absent in other blocks. Finally, 112 blocks shown in Table 1.2 have been covered.

The methodology for assessing the sustainability of livelihood mainly involves direct interaction with beneficiaries through structured questionnaires selecting individual beneficiaries as well as beneficiaries of community works under NRM. In each of the chosen Gram Panchayats, ten beneficiaries for NRM assets (individual or community) were selected for direct interview. The selection procedure also tried to include at least one household from each of BPL, SC/ST, small and marginal farmers. Focus group discussions were also administered at village community to understand the benefits from community assets specifically. Moreover, to understand the benefits of MGNREGA holistically from the perspectives of different stakeholders, one-to-one interaction guided by a semi-structured questionnaire was also conducted to extract information from officials involved in NRM at village, block, and district level.

Impact analysis is based on comparison of various NRM features before and after creation of the assets during the reference period. Being a rapid assessment survey of the NRM component, the sample of districts and blocks may not represent the entire spectrum of MGNREGA activities and the impact of such activities for the rural economy. It broadly represents the average picture of MGNREGS beneficiaries of NRM individual and community assets in those districts where fund availability per worker was around the average level during the reference period.

Table 1.1: MGNREGA Expenditure for Selected Districts

Agro-Climatic Zones	Avg. NRM Exp. Per worker (Rs) {Range}	State	District	Exp. Per worker (Rs)
Western Himalayan	4713 (91-21960)	Himachal Pradesh	Mandi	4794
		Uttarakhand	Dehradun	7007
			Nainital	4086
Eastern Himalayan	4326 (815-14169)	Assam	Nagaon	3587
		North Tripura	North Tripura	5811
Lower Gangetic	3559 (2369-5058)	West Bengal	Birbhum	3322
Middle Gangetic	3090 (675-5542)	Bihar	Samastipur	3419
		Uttar Pradesh	Maharajganj	3370
Upper Gangetic	2267 (25-4247)	Uttar Pradesh	Hathras	1836
			Kanpur Dehat	2478
Trans Gangetic	3296 (1516-9271)	Punjab	Muktsar	1516
		Haryana	Mahendragarh	2223
Eastern Plateau	2836 (989-7834)	Jharkhand	Sahebganj	4505
		Odisha	Boudh	3225
Central Plateau	2526 (708-4515)	Madhya Pradesh	Chhatarpur	3138
			Chhindwara	2758
		Rajasthan	Sawai Madhopur	2530
Western Plateau	3574 (1310-7726)	Maharashtra	Satara	4461
			Jalna	3932
		Madhya Pradesh	Neemuch	3265
Southern Plateau	4469 (1413-8058)	Karnataka	Kolar	4986
		Andhra Pradesh	Anantapur	6093
		Telangana	Mahbub Nagar	NA
Eastern Coastal	4418 (961-9069)	Tamil Nadu	Kanchipuram	7075
		Andhra Pradesh	Vizianagram	5708
Western Coastal	7240 (1707-11035)	Kerala	Pathanamthitta	9546
		Karnataka	Uttar Kannada	3976
Gujarat Plains	2322 (1009-3693)	Gujarat	Kheda	2519
Desert Region	4251 (510-24576)	Rajasthan	Bikaner	6266

Source: Based on MGNREGS website

Table 1.2: List of selected blocks in different districts

Agro-Climatic Zones	State	District	Block	
Western Himalayan	Himachal Pradesh	Mandi	Mandi Sadar	Gopalpur
			Drang	Seraj
	Uttarakhand	Dehradun	Vikasnagar	Chakrata
			Sahaspur	Doiwala
		Nainital	Dhari	Haldwani
			Ramnagar	Kotabag
Eastern Himalayan	Assam	Nagaon	Pachim Kaliabor	
			Lowkhowa	
	North Tripura	North Tripura	Jampui Hills	Damcherra
			Panisagar	Jubaraj nagar
Lower Gangetic	West Bengal	Birbhum	Illambazar	Rampurhat-I
			Nalhati-II	Labpur
Middle Gangetic	Bihar	Samastipur	Khanpur	Patori
			Mohanpur	Vidyapati nagar
	Uttar Pradesh	Maharajganj	Nautanwa	Mithaura
			Nichlalu	Partawal
Upper Gangetic	Uttar Pradesh	Hathras	Sikandrarao	Hasayan
			Sadabad	Sasni
		Kanpur Dehat	Sarbankhera	
			Jhinjhak	
Trans Gangetic	Punjab	Muktsar	Gidderbaha	Malout
			Lambi	Muktsar
	Haryana	Mahendargarh	Nangal choudhary	Narnaul
			Mahendragarh	
Eastern Plateau	Jharkhand	Sahiganj	Barharwa	Rajmahal
			Taljhari	Borio
	Chhattisgarh	Rajnandgaon	A. Chowki	Manpur
			Mohla	Dongargarh
	Odisha	Boudh	Kantamal	Boudh
			Harbhanga	
Central Plateau	Madhya Pradesh	Chhatarpur	Chhatarpur	Laundi
			Buxwaha	Gaurihar
		Chhindwara	Pandhurna	Jamai
			Sausar	Amarwara
	Rajasthan	Sawai Madhopur	Baukali	Bamnawasa
			Khandar	Sawai Madhopur
Western Plateau	Maharashtra	Satara	Khatav	Karad
			Khandala	Satara
		Jalna	Jalna	Ambad
			Ghansavangi	Bhokardan
	Madhya Pradesh	Neemuch	Manasa	Jawad

			Neemuch	
Southern Plateau	Karnataka	Kolar	Srinivaspur	Kolar
			Malur	Mulbagal
	Andhra Pradesh	Anantapur	Talupula	Kambadur
			Kundurpi	Kalyandurg
	Telangana	Mahboob Nagar	Maddur	Dhanwada
			Kosgi	Koilkonda
Eastern Coastal	Tamil Nadu	Kanchipuram	Thiruporur	Uthiramerur
			Acharapakkam	Madurantakam
	Andhra Pradesh	Vizianagram	Gummalakshmipuram	Pachipenta
			Merakamudidam	Cheepurupalle
Western Coastal	Kerala	Pathanamthitta	Pulikeezhu	Ranni
			Elanthoor	Koipuram
	Karnataka	Uttar Kannada	Siddapur	Mundgod
			Sirsi	Honavar
Gujarat Plains	Gujarat	Kheda	Kapadvanj	Nadiad
			Kathlal	Kheda
Desert Region	Rajasthan	Bikaner	Paanchu	Lounkaransar
			Naukha	

1.7 Broad Parameters of Selected Districts

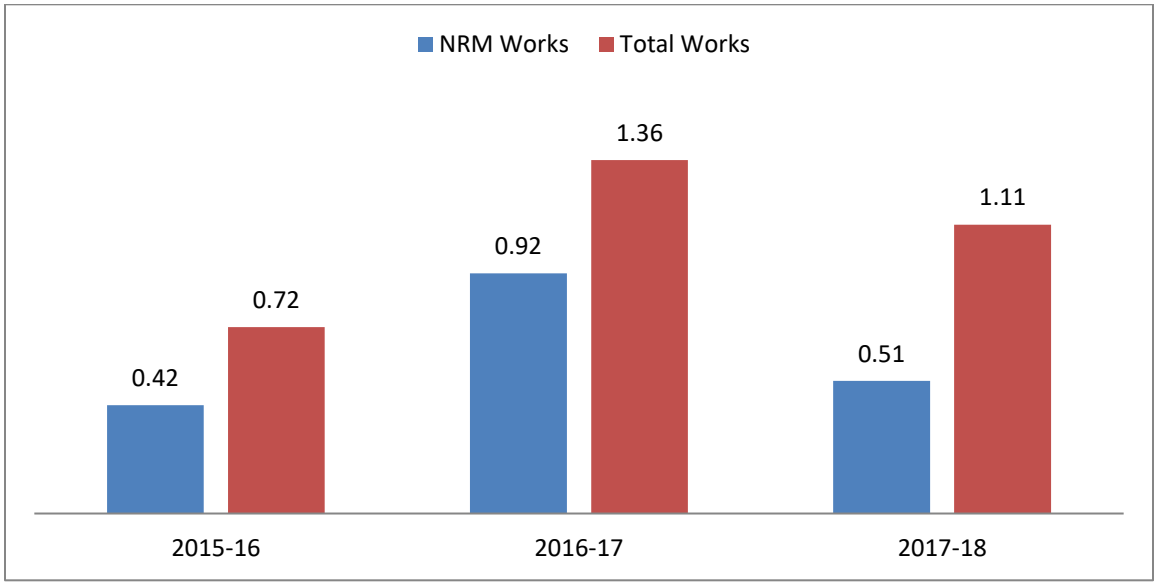
Before moving into details of survey data analysis, we may use some available data for the selected 30 districts to understand the status of NRM component under MGNREGA in these districts during the reference period.

NRM Assets

An important division for the works done under MGNREGA is the Natural Resource Management (NRM) works and other works. NRM works are works which can improve the extent of natural resources in order to positively influence agricultural and allied practice whereas non-NRM works are works which are responsible for building and strengthening rural infrastructure.

Out of total 155 types of assets, 100 are NRM related works such as farm ponds, dug-wells, check dams, contour7 and trenches. It has been observed that there is a good share of NRM works in total works taken up under MGNREGA in the selected districts. The share ranged between 45% to 68% during the last three years (Figure 1.1).

Figure 1.1: NRM and Total Works in Selected Districts (nos. in lakh)

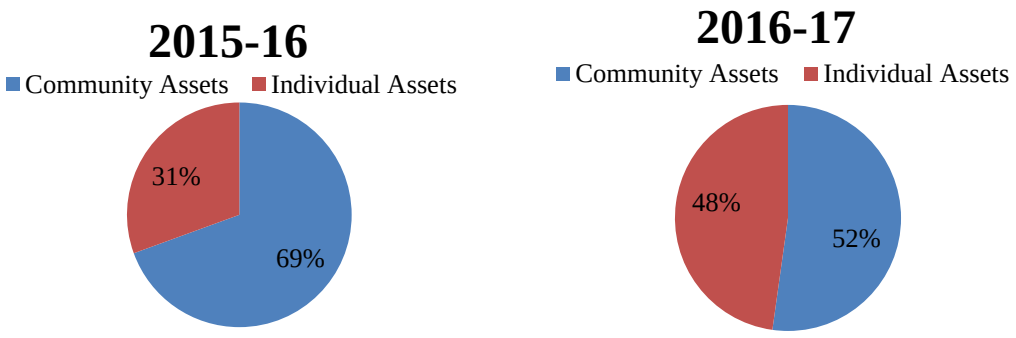


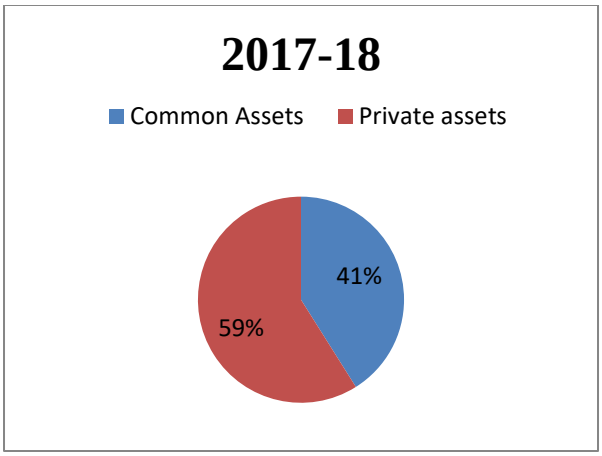
Source: Computed with data from MGNREGA Website.

Changing Composition towards Individual Assets

In all, there are 155 permissible works under MGNREGA, out of which 46 works are for individual lands ranging from contour bunds and farm ponds to vermi-composting and cattle shed. It has been observed that creation of assets on individual land in comparison to rural village assets is gradually changing. Figure 1.2 depicts that there is a change in composition of individual and community assets in favour of individual assets from 31% in 2015-16 to 48% in 2016-17 and 59% in 2017-18.

Figure 1.2: Creation of Individual and Community Assets in selected districts (%)



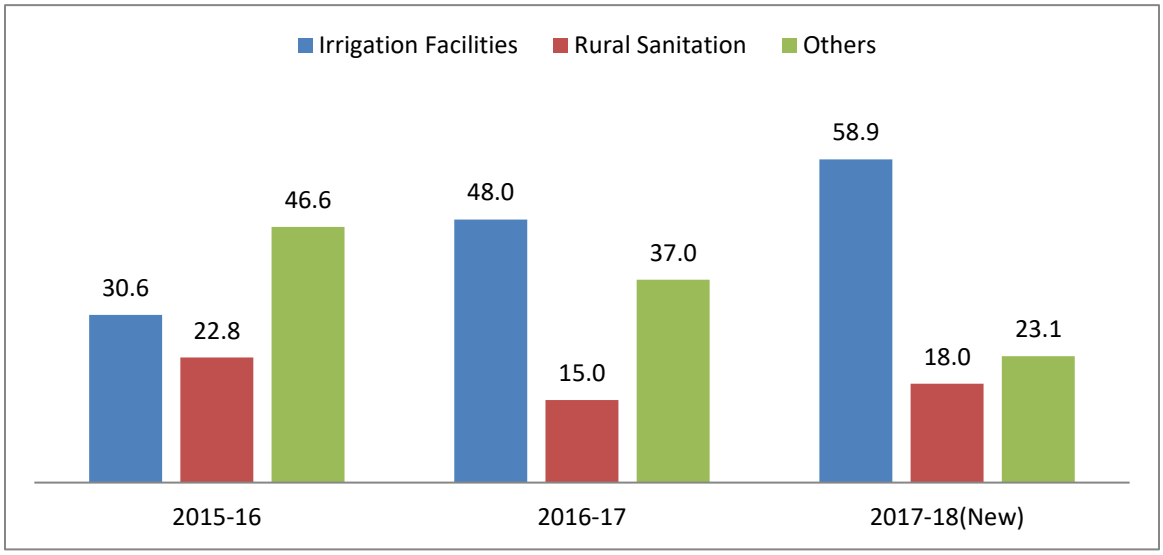


Source: Computed with data from MGNREGS Website

Types of Assets

There are different kinds of works covered under MGNREGA scheme such as water conservation and water harvesting, rural drinking water, irrigation canals, irrigation facilities for SC/ST, rural connectivity, renovation of traditional bodies, rural sanitation etc. Since 2015, major emphasis has been given to two kinds of works viz. irrigation facilities and rural sanitation. Figure 1.3 depicts year wise distribution of assets related to irrigation, sanitation and others in selected districts.

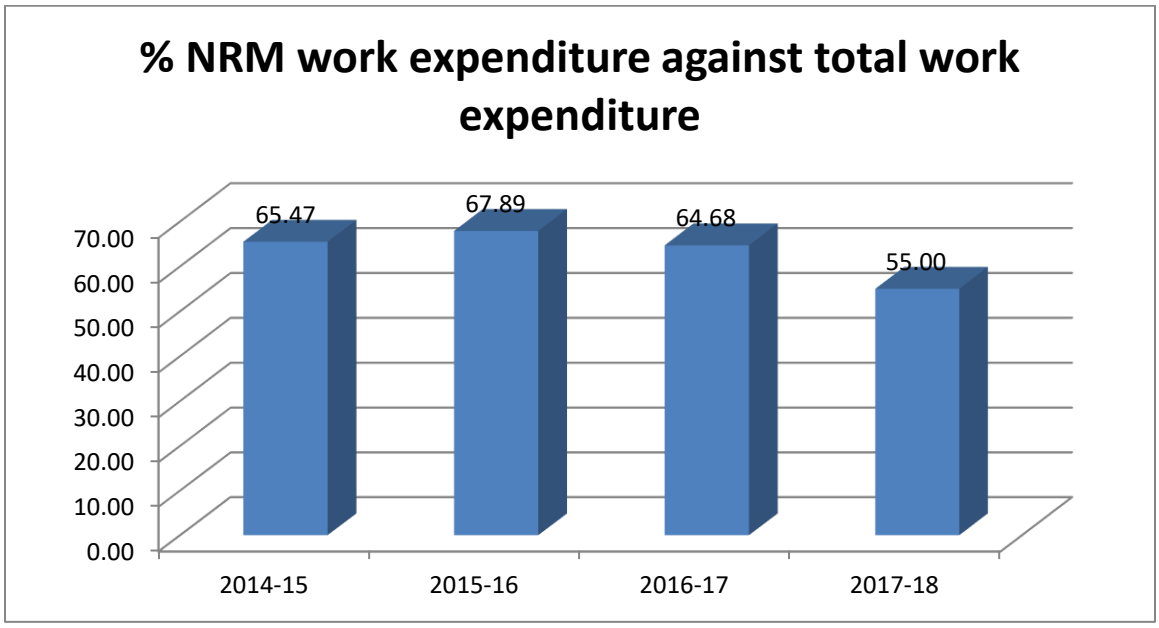
Figure 1.3: Different Assets created in Selected Districts (%)



Source: Computed with data from MGNREGA Website

Financial Expenditure

Figure1.4: NRM work expenditure against total work expenditure in Selected Districts (%)



Source: MGNREGA website

Figure 1.4 shows the proportion of NRM work expenditure in total work expenditure in MGNREGA during the years 2014-15 to 2017-18. NRM work expenditure accounts for 55-68% per cent of the total work expenditure in recent years.

Chapter 2

Households Characteristics and Work Participation in MGNREGS of the Surveyed Households

2.1 Socio-Economic characteristics of the selected Households

The survey to assess the impact of NRM assets covered sample of 1200 households across 30 districts in 21 different states. In this chapter, we document the various characteristics related to socio-economic aspects and other indicators of quality of life of the surveyed households. We then describe the work participation in MGNREGA, various major benefits derived by households. An attempt has also been made to explore factors affecting participation in individual assets creation and work participation by women.

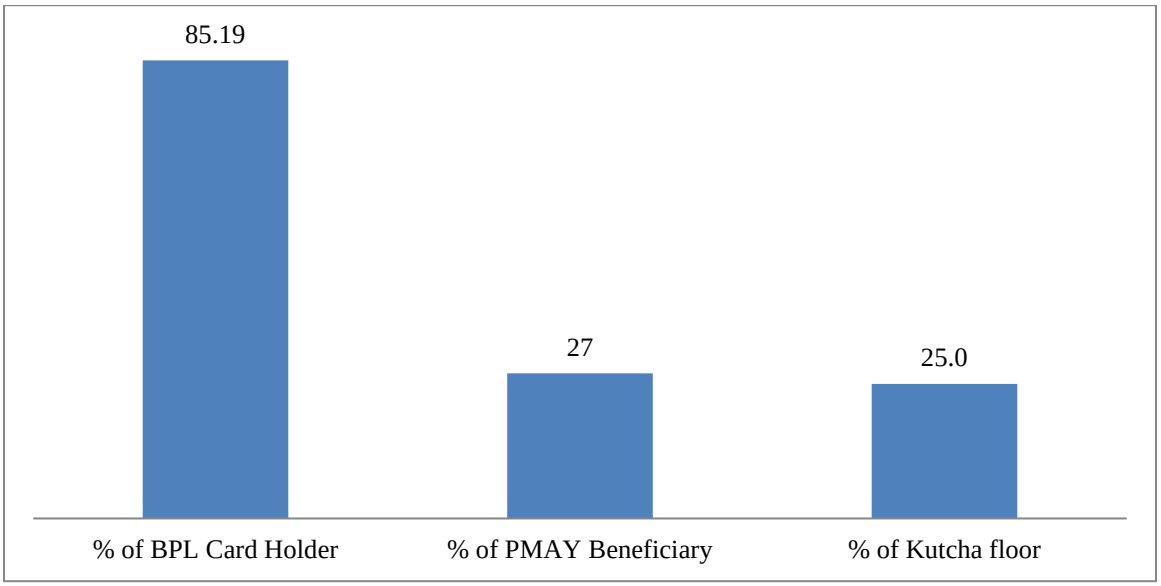
2.1.1 Economic profile of the households

Figure 2.1 depicts some socio-economic features of all the selected households. The district wise details are given in Annexure Table A1. Out of total 1200 beneficiaries, 85.2 percent of households are BPL card holders. All selected households in four districts viz. Satara, North Tripura, Nagaon and Kanchipuram comprise of only BPL category. Mandi district had the least number of BPL households with coverage of only 52.5%. Of the sampled households, 27 percent are found to be beneficiaries of Prime Minister Awas Yojna (PMAY). Among the selected hhs in the 30 districts, Nagaon had the highest percentage of the sampled households as PMAY beneficiaries while Sawai Madhopur had the lowest percentage of PMAY beneficiaries. Households having Kutcha floor turned out to be 25 percent.

2.1.2 Religion and Caste of the selected households

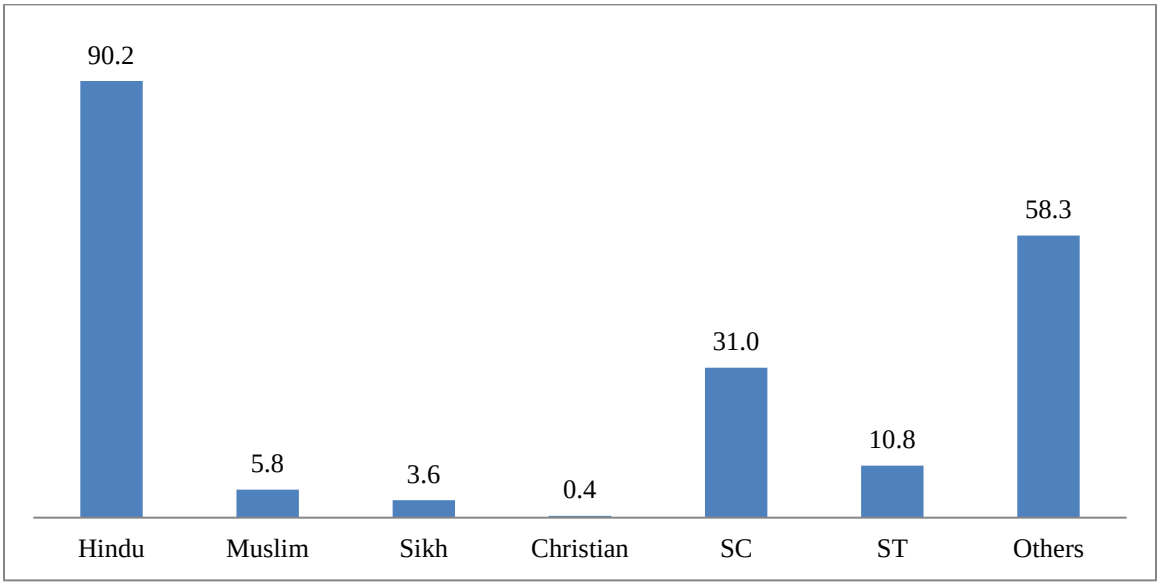
The sample has maximum representation of Hindu households at 90 percent. The district Nagaon has the highest proportion (48percent) of Muslim households. The sample in Muktsar comprises of Sikh households only, while Pathanamthitta and Sahebganj covers some Christian households. In the total sampled households, 31 percent are Scheduled Castes, 10.8 percent Scheduled Tribes and 58.4 percent belongs to other castes. Boudh had the highest percentage of Scheduled Castes while Rajnandgaon had the highest percentage of Scheduled Tribes in the sample. Figure 2.2 describes religion and caste of selected households and district-wise details are in Annexure Table A2.

Figure 2.1: Selected Socio-Economic Features of Households (%)



Source: IEG field survey data

Figure 2.2: Religion and Caste of the selected households (%)



Source: IEG Field survey data

2.1.3 Family size

It can be seen from the Annexure Table A3 that the average household size of the surveyed households is 5.9 which is relatively large as compared to national average (4.5). As many as 73 per cent of sample households have more than 5 members and the rest 27 per cent have less than 5 members. In districts such as Jalna, Kanchipuram, Kolar, Maharajganj, Nagaon and Uttar

Kannada, the family size ranges from 7 to 8 members. The average earning member in the sampled households was 2.4. The dependency ratio turns out to be 1.4 for proportion of all age groups.

2.1.4 Women Participation

As per the provision, work should be properly divided among workers considering at least 1/3rd participation of women. From the beginning, it is found that MGNREGA has supported women in getting employment, helping them to support their household activities. About 67 percent of surveyed households had women participation in MGNREGA while 23 are women headed households. Furthermore, it is also found that 40 percent of total workers are women which can be considered as reasonable percentage for women participation. Four Districts such as Mandi, Anantapur, Muktsar and Rajnandgaon have equal to or more than 50 percent of women workers. (Annexure table A4). Besides this, it is also revealed that women are participated in MGNREGA for an average of 17.9 days.

2.1.5 Educational Profile

The educational profile of the household members reveals that 13.8 percent household members are illiterates and another 8.1 percent are literate without formal qualification. More than half of the sampled households have at least one member who has studied up to 12th standard. More than 20 percent of households in districts such as Mandi, Satara, Boudh, Kanchipuram and Sahebganj have also completed diploma courses. The details of the educational profile can be referred to in Annexure Table A5.

2.1.6 Occupational Profile of the surveyed households

Among the sampled households, 65.1 percent were small and marginal farmers followed by 25.6 percent of unskilled laborer (3.3 percent agricultural laborer and 22.3 percent of unskilled laborer) (Figure 2.3 and Annexure Table A6). The inclusion of high proportion of farmers in the sample reflects adequate coverage of individual asset beneficiaries.

Figure 2.3: Primary occupation of the selected Households (%)

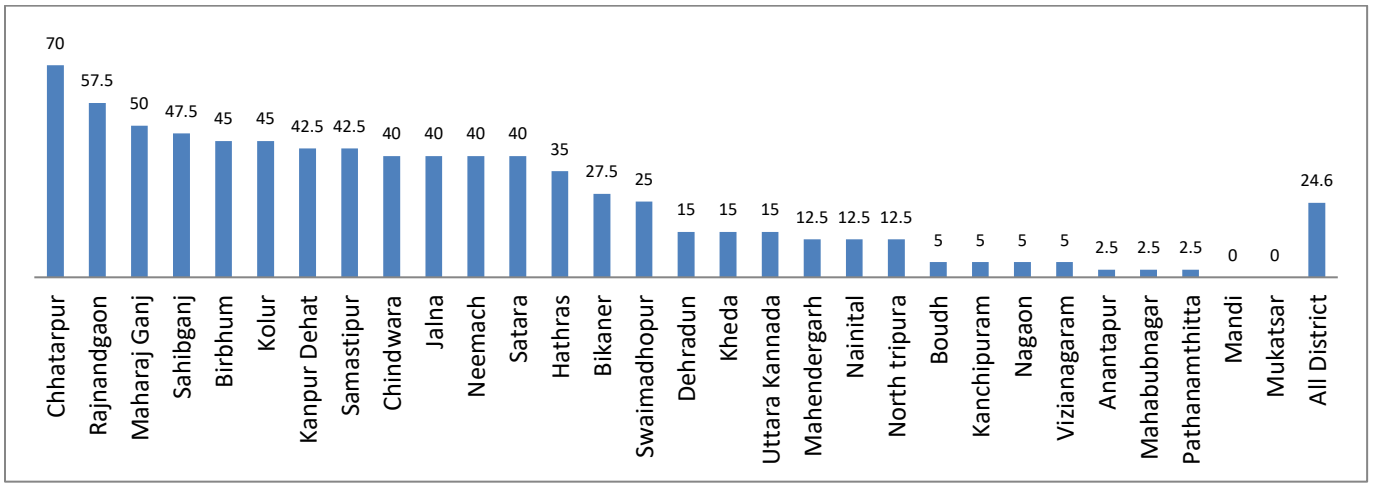
Source: IEG field survey data

2.2 Quality of Life of the selected Households

2.2.1 Flooring facility

Floor of the house is an indicator which helps in understanding the economic status of the household. 25 percent of households possess Kutcha house with mud floor and the other 75 percent could afford a pucca floor. Chhatarpur has 70 percent of Kutcha floor among the sampled districts followed by district Rajnandgaon with 58 percent. More than 40percent of households in districts such as Birbhum, Chhindwara, Jalna, Kanpur Dehat, Kolar, Maharajganj, Neemuch, Satara, Sahebganj and Samastipur had Kutcha floor which clearly describes the relatively poor economic condition of sampled households (Figure 2.4).

Figure 2.4: Percentage of household with Kutcha floor



Source: IEG Field survey data

2.2.2 Lighting facility

About 83.4 percent of households reported that they are having electricity as the primary source of lighting facility. In districts like Anantapur, Boudh, Dehradun, Jalna, and Kanchipuram, 100 percent of the households had electricity supply. Another important source of lighting is Kerosene lamp used by 15.9 percent of households in the survey. Sample households in districts such as Kanpur Dehat (87.5percent), Hathras (67.5 percent), Chhatarpur (57.5 percent), Maharajganj (52.5 percent) and Samastipur (52.5 percent) are mainly using kerosene as a source of lighting (Annexure Table A7).

2.2.3 Fuel used for cooking facility

Most of the households (53.3percent) use wood or crop residues for cooking. In Kolar and Uttara Kannada, almost all use wood for cooking. In Hathras and Kanpur Dehat, 67.5 percent and 65 percent of households used dung cakes respectively. In Satara and Kanchipuram, 87.5percent and 97.5 percent of households respectively use LPG as main source of cooking (Annexure Table A8).

2.2.4 Drinking Water facility

There were diverse sources of drinking water among sampled households including pipe water, hand pump, public hand pump, and public well. All households in Mandi district are using pipe water in residence as main source of drinking water. It should be noted that public source are mostly used as source of drinking water among the sampled households in comparison to private sources such as pipe water, hand pump and well within residence(Annexure Table A9).

2.2.5 Toilet Facility

About 56.5 percent of sampled households use private flush toilets. Almost all the households in districts such as Birbhum, Chhindwara, Dehradun, Mandi, Neemach, Rajnandgaon and Sawai Madhopur use private flush toilets. However, all selected the selected households in Uttara Kannada district resort to open defecation. It may be noted that 67.5 percent of households in Kanchipuram had their own pit toilet (Annexure Table A10).

2.2.6 Durable Asset

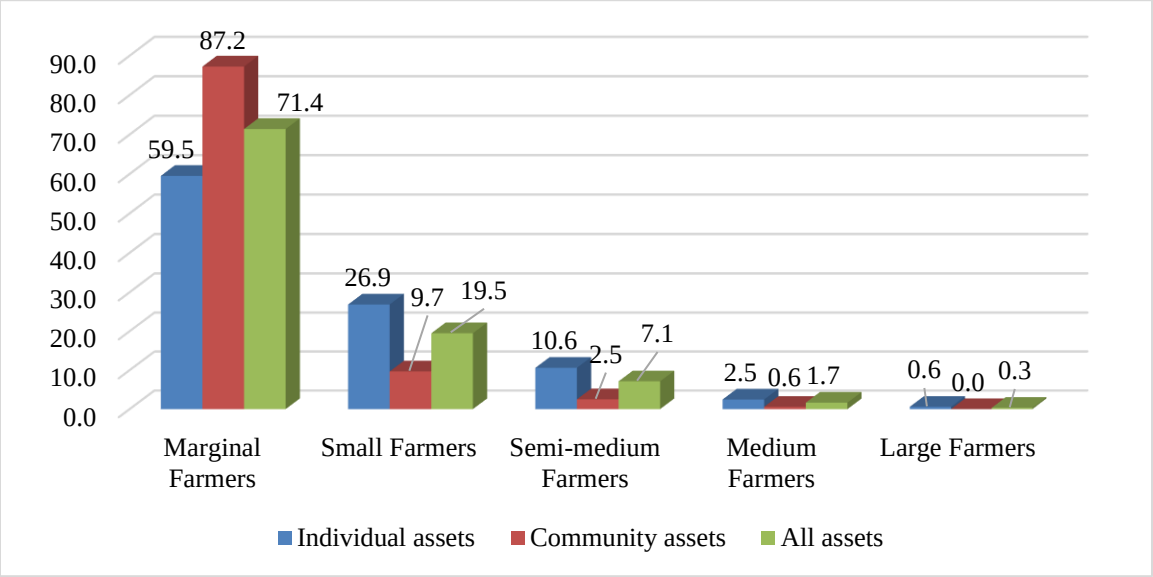
Possession of assets is also one of the criteria to understand the condition of households. About 54.5% of selected households are found to have color television. About 25 percent of selected households in Bikaner district own black and white television. Two-wheelers such as motorcycle or scooter are also considered to be good asset for rural households. It was found that 24.4 percent of sampled households possess motorcycles. Further, 97.3 percent of households were found to have a mobile phone. All households in districts such as Anantapur, Kanpur Dehat, Satara, Pathanamthitta and several others possess mobile phone (Annexure Table A11).

2.2.7 Access to land

Access to land was one of the criteria for selecting households so that individual NRM beneficiaries are included in the sample. Average cultivable land holding size is 1.99 acre before asset creation which nearly remained constant at 1.97 acre after asset creation (Annexure Table A12).The virtual invariance of average land size before and after creation of assets is due to the fact that the land market is thin in India as households sell land only when very much pressed to do so.

Further, in order to understand more about land holding profile of the beneficiaries, we have used the standard classification of farmers with respect to land holding size, i.e., marginal farmers (0.0049 to 2.47 acre), small farmers (2.48 to 4.94 acre), semi-medium (4.95 to 9.88 acre), medium farmers (9.89 to 24.7 acre) and large farmers (24.7 acre and more). It may be observed that 71.4 percent of all beneficiaries are marginal farmers followed by 19.5 percent small farmers. These two groups together constitute more than 90% of the beneficiaries. As Figure 2.5 indicates participation of marginal farmers is relatively more in the community assets category while small, medium and large farmers participate more in the individual assets category compared to their overall presence in NRM activities.

Figure 2.5: Percentage of beneficiary Households by land size



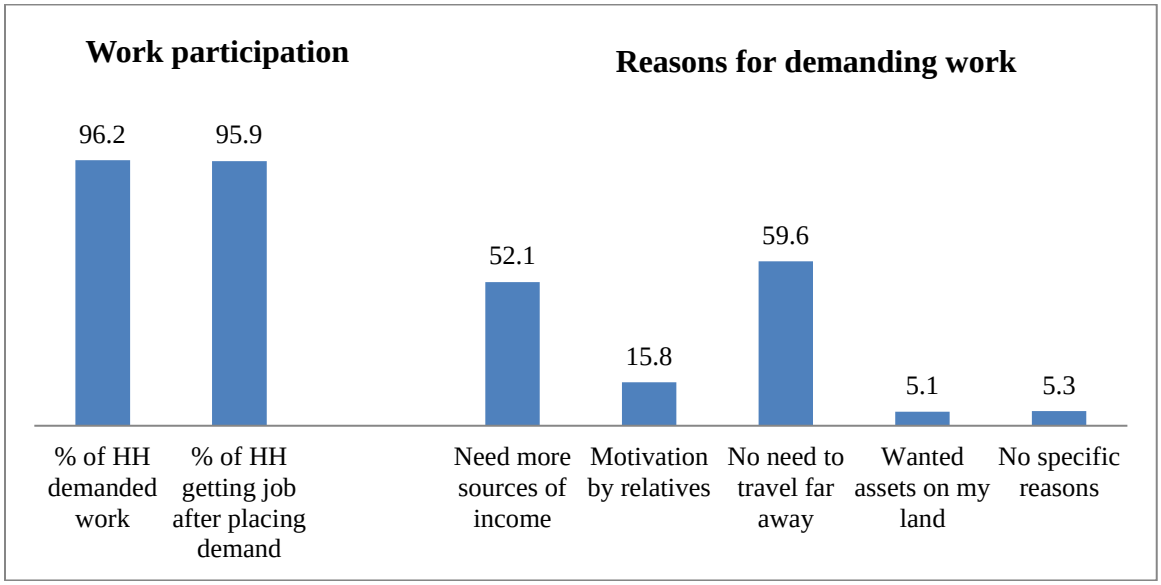
Note: Six common households reported benefits from both types of assets and have been counted for both types of assets. The percentages in this figure are out of a total of 1206.

2.3 Work Participation and Creation of Assets of the selected households

As a demand driven public works programme, MGNREGA initially provided jobs to people for building up of rural community infrastructure. However, with the inclusion of private asset creation as an objective of the programme, households are benefiting from both individual and community assets. The work participation aspects discussed below thus focuses on both types of assets covered in this study.

As per the survey findings, 96.2 percent of sampled households demanded work under MGNREGA scheme and almost all of them (95.9 percent)got the work after placing the demand. This is not surprising since the sample households are beneficiaries of NRM assets. While assessing the reasons for demanding the work, it was found that about 60 % of households demanded work because they could get the job intheir village or in a nearby village. 52.1 % of household reported that they demanded work to earn additional income for their sustenance. Figure 2.6 describes details related to work participation of all the selected households while district-wise data are given in Annexure Table A13 and A14.

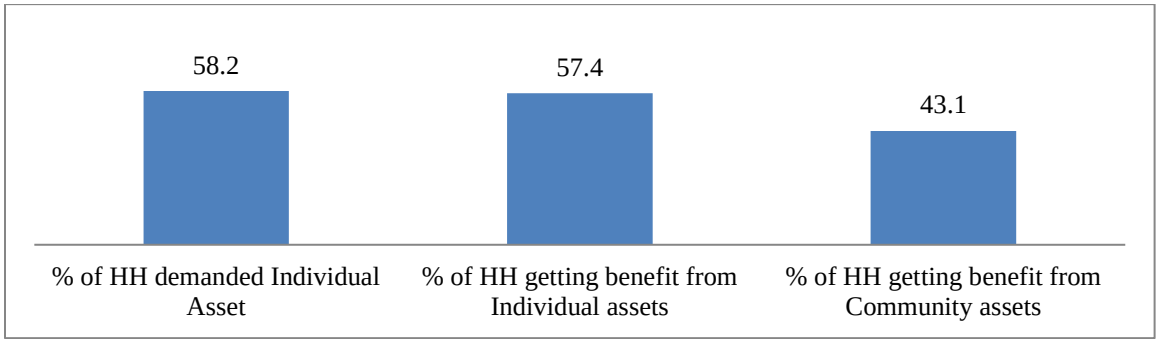
Figure 2.6: Work Participation of the selected households (%)



Source: IEG Field survey data

The study tried to find out the status of assets creation under the scheme and the benefits households are getting from them. Since individual assets can offer more direct benefits to households in comparison to community assets, willingness of beneficiaries for creating individual assets is enquired. It was found that 58 percent of sampled households demanded individual assets on their own land and 57 percent got the individual asset on their land. Notably, about 21 percent of sampled households did not demand the assets on their land. On the whole, 57.4 percent of sampled households are found to be individual beneficiaries and 43.1 percent community asset beneficiaries (Figure 2.7). It was observed that a few individual asset beneficiaries are also beneficiaries from community asset.

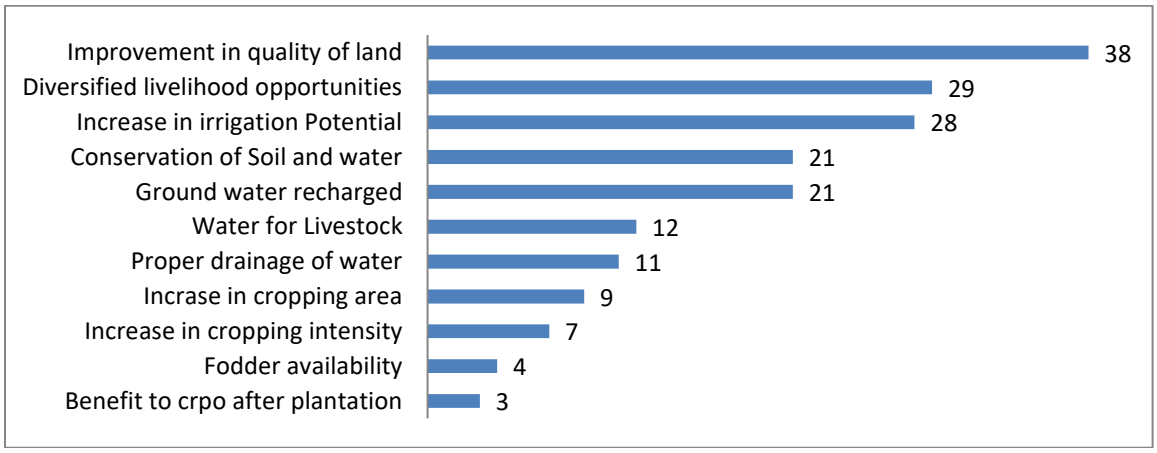
Figure 2.7: HH getting Benefit from the creation of individual and community Asset (%)



Source: IEG field survey data

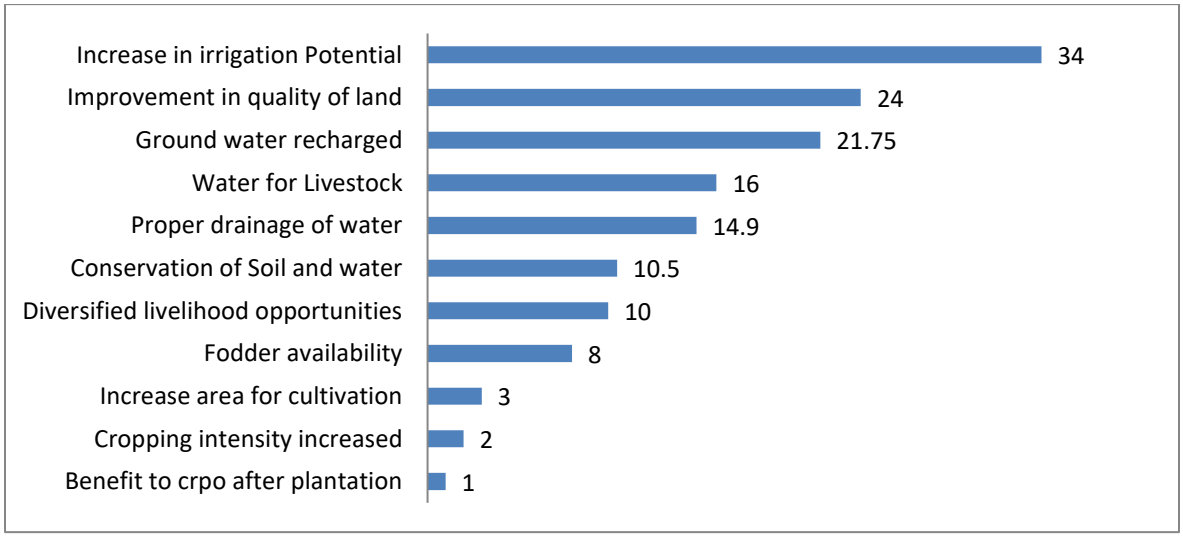
Types of benefits accruing from individual and community assets were discussed in detail with beneficiaries. Small and marginal farmers reported that both individual and community assets have helped in improving their land quality. 38 percent of households stated improvement in quality of land after asset creation on individual land. It is noted that 29 percent of households diversified their livelihood options, particularly to horticulture plantations which gave them higher returns. Besides this, 28 percent of beneficiaries also observed that NRM asset creation benefited them by increasing the irrigation potential. (See, Figure 2.8 and Annexure Table A15).

Figure 2.8: Benefits from individual assets of the selected Households (% of HH)



Source: IEG Field survey data

Figure 2.9: Benefits from community assets of the selected Households (% of HH)



Source: IEG Field survey data

Figure 2.9 describes benefits derived from community asset. About 34 percent of sampled households found that community assets helped them in increasing irrigation potential. An important benefit that both individual and community asset beneficiaries experienced is the increase in ground water table. Besides this, about 16 percent of community asset beneficiaries and 12 percent of individual asset beneficiaries also found that access to water for livestock has increased. Annexure Table A15 can be seen for more details.

Works undertaken in MGNREGA has spread out several benefits by increasing the irrigation potential, improving the ground water table and enriching the quality of land which ultimately has helped small and marginal farmers in improving the agriculture, the primary livelihood opportunity of small and marginal farmers. Overall, it can be said that both individual and community asset holders haveimproved their livelihood opportunities after asset creation.

2.4: Determinants of Individual Asset Creation

In our survey consisting of 1200 households, 689 households were found to be individual NRM asset beneficiaries. In this section, we explore some factors that influence participation of households on assets creation on their individual land. Based on recorded characteristics of the households surveyed, we select the variables which are likely to impact individual asset creation behaviour such as BPL status, house floor, income, migration, and landholding. We use an econometric technique called Logistic (Logit) Regression Analysis to examine likelihood of various factors in impacting NRM asset creation on individual land. We give below a summary of the findings with details on regression method and results relegated to an Appendix to this chapter.

Our data analysis indicated that the following factors had an impact on the likelihood (odds ratio) of a household creating individual asset on its own land:

- BPL status: a BPL household is 44% more likely to get assets created on its land compared to a non-BPL household.
- House floor: households having Kutcha floor are 70% more likely to participate in asset creation on individual land.

- Migration: a household with a migrating member is 57% more likely to get NRM assets created on its individual land. Migrating households possessing land seem to be the more successful ones in search of additional opportunities.
- Land holding size: in comparison to marginal farmers the odds ratio of small, semi-medium and medium farmers are several times more likely to get assets created on their individual land. It indicates that the higher the land holding of a household among MGNREGA beneficiaries, the more is the chance of its taking up asset creation.
- Income level: The likelihood of participation in individual asset creation increases at the upper end of the income bracket among the possible MGNREGA participants.

It can thus be concluded that household poverty status (BPL), house floor (Kutcha), migration, land holding size, and relatively higher per capita income level are factors that influence positively likelihood of individual asset created on individual land. The apparent contradiction of inclusion of both poverty status and higher income group as factors with positive impact is not actually a contradiction since the phrase 'higher income group' here refers only to relatively better off among the MGNREGA beneficiaries.

2.5 Determinants of Women Work Participation

MGNREGA has several gender sensitive features that are attractive to women workers. The Act stipulates that priority shall be given to women. In terms of implementation, it mandates that a minimum of one-third of the beneficiaries are to be women and that wages should be the same for male and female workers. It has been found that women's participation in MGNREGA has been increasing (Dasgupta and Sudarshan, 2011). There is another sense in which MGNREGA is a women's programme; households in some states report an overwhelming majority of the MGNREGA households send only its female members to work in the MGNREGA underscoring the importance of MGNREGA as an option (Narayanan and Das, 2017).

In our study, it is seen that more than one third of the women of the selected households are involved in MGNREGA work. Women's participation in MGNREGA jobs might be influenced by a number of socio-economic factors such as migration status, caste, education, per capita income and number of male earning members and children in the household. We have experimented with the Logit model to examine the direction and strength of the impact of some possible determinants. The results (discussed in details in the Appendix) are:

- Migration status: women in migrating households are 28% less likely to participate in MGNREGA work.
- Male earning member: (with an additional male earning member in the house) women are 26% less likely to participate in MGNREGA work.
- Social category: Women in SC/ST households are 63% more likely to participate in MGNREGA in comparison to the general caste households.
- Education: As education level of a member of the household increases, women are less likely to participate in MGNREGA.
- Income groups: As a household moves to relatively a higher income groups from the lowest group, women participation in MGNREGA increases initially but falls later.
- Number of children: Women in households having children less than 10 years are 67% more likely to participate in MGNREGA to reduce financial burden of the household.

To sum up, the likelihood of women work participation are negatively impacted by migration, number of working males, highest education level of household members, and positively by SC/ST social group and number of children below 10 years. While women participation is likely to rise as a household moves from lowest income group to the second lowest, it falls thereafter with movement towards higher income groups among beneficiaries. Women participation in the MGNREGA labour market appears to be a complex household decision influenced by several socio-economic factors.

MGNREGA Success Story I

A Structure to restrict sea water from damaging field crops in Honnavar Block, Karki Panchayat of Uttar Kannada district in Karnataka.

The pond like structure is created to restrict sea water during upper tide from damaging field crops. The above structure of around 20 and 15 feet of length and width with depth of 6 feet restricts saline water from going to agricultural land in adjacent areas. This structure saves around 25 hectare of agriculture land from intrusion of saline water. In due course saline water fish may also be cultivated in the structure. It has been made at a total cost of Rs 10,9397 in 312 mandays. Some structures like this have been constructed in villages in Hannovar, Uttar Kanada to save field crops from saline water of estuaries.

Image 3: NRM structure in initial stage

MGNREGA Success Story II

Agriculture drainage cum irrigation channel on individual's plot of Halams in Bhullukcherra under Rahumcherra ADC Village in North Tripura

The Agriculture Drain channel created on plot of Multonjoy Halam and extends to the plot of Lienmunrai Halam at Bhullukcherra under Rahumcherra ADC Village drains excess water in rainy season and also provides water to area of around 30 ha of land for agriculture purpose.It has been created with a total estimated cost of Rs 98,965 within 544 total man days. Previously the rain water especially in rainy season merged the entire paddy land. After execution of the drain, the excess water is drained out and the paddy grows well. In the dry season the water can be provided to the paddy land from the nearby stream. The local people (around 25 farmers) especially owners of the paddy lands are very happy and are benefited with this project.

Image 2: Agriculture drainage cum irrigation channel

Date of commencement : 05/07/2017; Date of completion: 07/08/2017

Appendix to Chapter 2

Logistic Regression

Logit (Logistic) Regression Model.

Logistic model is one of the most widely used qualitative regression model, when the dependent variable is categorical in nature. Many a time, an analyst deals with a problem in which the dependent variables assumed to be categorical/dichotomous in character. For instance, questions about whether to participate or not to participate in NREGA could be an important dimension of analysis. In this case we might have 'yes-no' type response, and factors influencing the decision are analysed through models with qualitative dependent variables. Logit is one of the most widely used qualitative regression models because Logit gives the direct estimation of the likelihood of the occurrence of a particular event under study (see Gujarati et al., 2009).

Based on our survey results, we have used Logistic Regression Analysis to study the following specific issues in this chapter:

- Creation of NRM-MGNREGA assets on individual land.
- Women participation in MGNREGA work.

B. Factors Determining Individual NRM Asset Creation

Asset created on individual land has multiple benefits. Determinants of factors those influence creation of NRM asset on individual land of the beneficiaries in MGNREGA are assessed with Logistic Regression with binary dependent variable. In our survey consisting of 1200 households, 689 households were found to be individual NRM asset beneficiaries, i.e., they are participants in asset creation on individual land. On the basis of the characteristics of the households surveyed, we select the variables for determinants of individual asset creation in MGNREGA. Examples of such variables are social category of the households, house floor, per capita income, presence of migration and landholding. The mathematical specification of the Logistic equation expressing the relationship between the above mentioned variables and the binary dependent variable of likelihood of individual asset creation is stated as:

$$In(P_i/1-P_i) = \alpha + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + €_i \qquad (i = 1, 2, \ldots, 1200) ;$$

where

- Pi/1-Pi = ratio of the probability that an individual will participate in asset created in his/her land to the probability that he won't participate in asset created in his land. Ln(P_i/1-P_i) is the log of the odds which is the dependent variable in the binary logistic regression equation. The slope coefficient of a variable in Logit Model gives the change in the log of the odds associated with a unit change in the variable under consideration, holding all other variables constant.
- X1i = the BPL status of the ith respondent, which is assigned value 1 if he belongs to BPL class and 0 if he does not belong to BPL class.
- X2i = house floor conditions beneficiary, which is assigned the value 1 if the house floor is *katcha* and 0 otherwise.
- X3i = migration status of the household, which is assigned the value 1 if there is migration in the household and 0 otherwise.
- X4i = size of Land Holding of the ith household with land owners categorized into 4 groups according to NSSO Land Classification as stated below:

  1 = Marginal farmers.

  2 = Small farmers

  3= Semi-medium farmers

  4 = Medium farmers.
- X5i =household income group created by dividing beneficiary households arranged in ascending order of per capita income into 5 quantiles $Q_{1, \ldots}$ Q_5 groups of 20% each. The group Q_1 represents the poorest 20% and Q_5 the richest 20% among the participants. This only a relative income division among participants since our sample consists of households who are MGNREGA beneficiaries and are likely to belong to lower income strata in the society.

The impact of change in the independent variables (X1 to X5) on the probability of participation in MGNREGA individual asset creation is estimated by assuming a logistic distribution. The coefficients $\beta_{1,}$ $\beta_{2,}$ $\beta_{3,}$ $\beta_{4,}$ β_5 indicate the impact of change in corresponding independent variables on the natural log of odds of individual asset creation in MGNREGA. The Logistic model is run using the software STATA.

Results

Table 2.A1: Factors determining individual asset creation under NRM-MGNREGA

Individual Asset Participation		**Odds Ratio**	**P> Z**	**[95% Confidence Interval]**
BPL		1.437	0.069	[0.973 ; 2.124]
Kutcha Floor		1.698	0.000	[1.274 ; 2.263]
Migration		1.567	0.007	[1.130 ; 2.172]
Land Holding	Marginal(reference)			
	Small	3.931	0.000	[2.733 ; 5.654]
	Semi Medium	6.279	0.000	[3.297 ; 11.956]
	Medium	7.125	0.002	[2.029 ; 25.016]
Per Capita Income	Q1(reference)			
	Q2	0.943	0.756	[0.650 ; 1.367]
	Q3	1.310	0.159	[0.899 ; 1.908]
	Q4	1.676	0.009	[1.137 ; 2.471]
	Q5	1.660	0.017	[1.094 ; 2.518]
Constant		0.433	0.000	[0.273 ; 0.686]

As seen in the above table, the odds ratio of BPL class is 1.437, and is significant at 10% level which means that, with other factors remaining constant, a BPL household is 44%(=1.437*100 – 100) more likely to get assets created on its land. The odds ratio of *Kutcha* floor house is 1.698 implying that the households having *Kutcha* floor are 70% more likely to participate in asset creation on individual land compared to those having *pucca* floor. A household whose members have migrating member(s), is 57% more likely to get NRM assets created on its individual land.

As far as impact of land holding size on asset participation is concerned, estimated results suggest that, in comparison to marginal farmers, the odds ratio of small, semi-medium and medium farmers are several times more likely to participate to create assets on their land. The result implies that the higher the land holding of a household, the more is the chance of its taking up asset creation on individual land, keeping other determinants constant. This is understandable since a household must possess a critical minimum land to use part of it for ponds etc.

The above table also reveals that as compared to the first per-capita income quantile Q1, the income groups Q4 and Q5 are more than 60% likely to participate in asset participation. The

results for Q2 and Q3 are not significant. Thus, the likelihood of participation in individual asset creation increases at the upper end of the income bracket among the MGNREGA beneficiaries.

It can thus be concluded that household class (BPL), house floor (Kutcha), migration, land holding size, relatively higher per capita income (Q4 and Q5 among beneficiaries) are the factors that influence positively likelihood of individual asset created on individual land.

C. Determinants of Women Work Participation

MGNREGA has a provision that at least one-third of the jobs must be provided to women. Hence, we explore the determinants of women participation in MGNREGA work. Women's participation in MGNREGA jobs and their capacity to earn a sizeable income from such job is likely to be influenced by a number of socio-economic factors. The possible factors are presence of migration, number of male earning members in the household, caste, education, per capita income and presence of children.

The Logistic Regression on women participation is specified as:

$$\mathbf{In\ (\ P_i/1\text{-}P_i\ ) = \alpha + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \epsilon_i\ (\ i = 1\ to\ 1177)}$$

The data on women participation or non-participation are available for 1177 observations and no women participation information is reported for the rest 23 households. In the above equation:

- Pi/1-Pi = ratio of the probability that women in the ith household would participate in MGNREGA work to the probability that she won't participate.
- X1i = 1 if there are migrant member(s) in the ith household and 0 if otherwise.
- X2i = number of male working members in the household.
- X3i = caste of the ith household with the following categorical values:
  Genneral = 1 (reference category)
  OBC = 2
  SC/ST = 3.
- X4i = highest level of education attained by a member in the ith household with following assigned values:
  Illiterate = 1
  Primary education= 2
  Secondary education= 3
  Higher than secondary education = 4.

- X5i =Per capita income quantile groups Q_1 to Q_5 as defined above
- X6i = presence of children below 10 years in the ith household (1 if it has any child below 10 years and 0 if it doesn't).

Results

The odds ratio of migration is 0.723 which implies that, other factors remaining constant, women in migrating households are 28% (=0.723*100–100) less likely to participate in MGNREGA work. They probably feel less pressed to do manual work/asset participation work with inflow of income from the migrated family member. The odds ratio of number of earning male is 0.753 which indicates that women are 26% less likely to participate in MGNREGA work with an additional male earning member. The higher the number of earning male, the lower is the likelihood of women participating in MGNREGA work. With general caste as the reference category, the odds ratio of SC/ST household is 1.632. Thus, in comparison to the general caste households, the women in SC/ST households are 63% more likely to participate in MGNREGA.

As far as education is concerned, the coefficient of primary education is not significant indicating no difference from participation of women in illiterate households which is the reference group. Women in households with members having secondary and higher education are less likely to participate in MGNREGA by 35% and 47% respectively compared to the reference group. On the whole, probability of women participation declines with rises in education level of a member of the household.

Turning to income groups, it is seen that, as compared to the women in the lowest income quantile group Q1, the women in second lowest income group Q2 are 72 percent more likely to participate in MGNREGA; but, women in the higher quantile groups are less likely to participate in MGNREGA. Specially, women from the top income group Q5 are 38% less likely to participate and the difference is significant one.

Our results also indicate that women in households having children less than 10 years are 67% more likely to participate in MGNREGA. This indicates that households having more children means a higher dependency ratio and women in such households are more likely to participate in MGNREGA to reduce the financial burden of the household.

The conclusion thus is that likelihood of women work participation are negatively impacted by migration, number of working males, education level of household member and positively by

SC/ST social group, presence of children below 10 years. While women participation is likely to rise as a household moves from lowest income quantile to the next, it falls for higher income groups.

Table 2.A2: Determinants of women work participation in MGNREGA

Women Participation		**Odds Ratio**	**P>z**	**[95% Confidence Interval]**
Migration		0.723	0.057	[0.517 ; 1.009]
No. of earning male		0.753	0.007	[0.613 ; 0.924]
Caste	General (reference)			
	SC/ST	1.632	0.005	[1.160 ; 2.297]
	OBC	0.809	0.214	[0.579 ; 1.130]
Education	Illiterate (reference)			
	Primary	0.914	0.669	[0.604 ; 1.382]
	Secondary	0.652	0.019	[0.456 ; 0.931]
	Higher	0.526	0.004	[0.341 ; 0.811]
Per Capita Income	Q1 (reference)			
	Q2	1.718	0.015	[1.111 ; 2.655]
	Q3	0.877	0.530	[0.582 ; 1.321]
	Q4	0.943	0.784	[0.621 ; 1.433]
	Q5	0.618	0.024	[0.407 ; 0.938]
Children		1.673	0.000	[1.279 ; 2.189]
Constant		3.375	0.000	[1.774 ; 6.421]

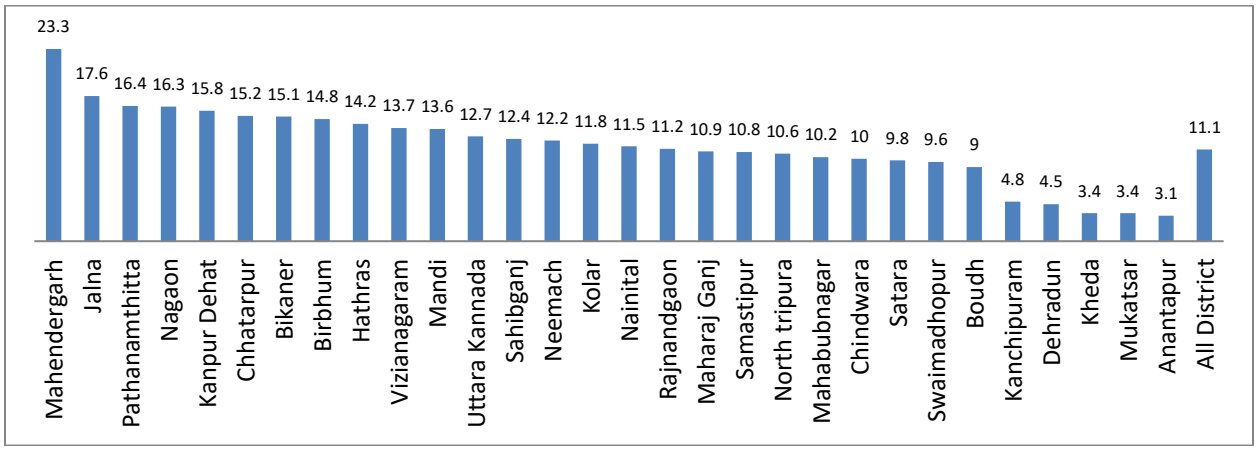
Chapter 3
Economic Impact

3.1 Income, Productivity, Production Expenditure and Credit

3.1.1 Income

Household income is an overall indicator to assess the economic condition of a household. The primary objective of MGNREGA is provision of additional income for the sustenance of livelihoods. When impact of MGNREGA on income is assessed considering before and after creation of the NRM assets, it was found that household income has increased in all the selected districts. Gross annual income per household (HH) of all the 30 districts taken together has increased from 85 thousand to 95 thousand i.e. 11.1 percent growth within a span of two years 2015-16 and 2016-17. NRM assets creation on either community or individual land is the dominant visible factor in the rural areas for this growth to take place. The average annual income growth of the surveyed households in all districts has been shown in Figure 3.1. The change in income is found to be the highest for the beneficiary households in the district of Mahendragarh in Haryana (23.3%) followed by Jalna in Maharashtra (17.6 percent) and Pathanamthitta in Kerala (16.4 percent) while beneficiaries in Muktsar of Punjab (3.4 percent), Kheda of Gujarat (3.4 percent) and Anantapur in Andhra Pradesh (3.1 percent) were at the bottom end of income growth ranking.

Figure 3.1: Average Income Growth of beneficiaries HH in different districts

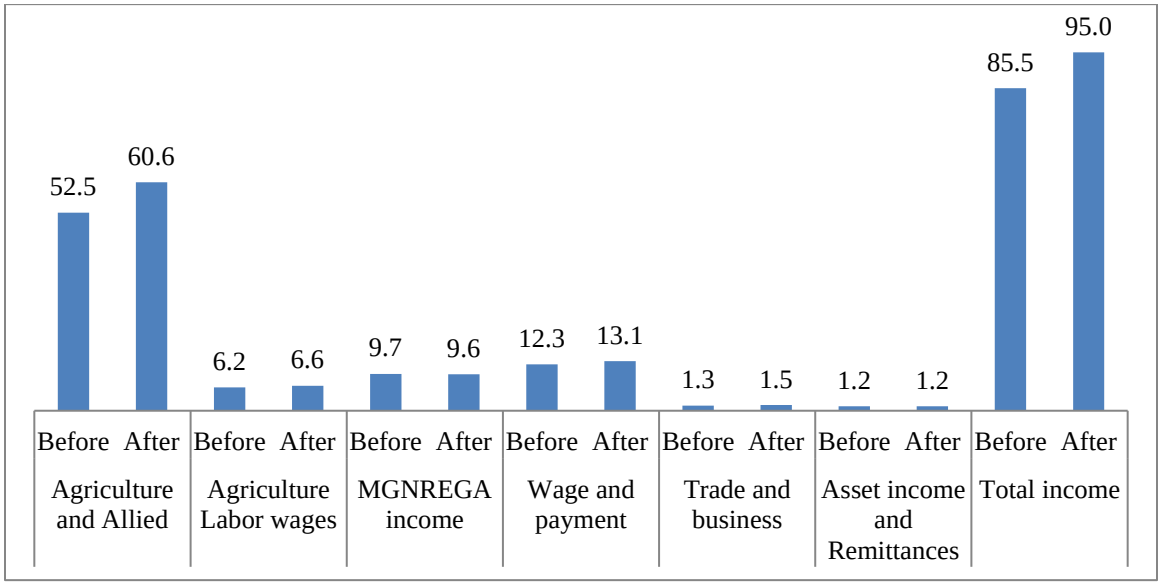


Source: IEG field survey

The inter-district average household income variation is large ranging from Rs. 54 thousand to Rs.160 thousand. Muktsar had the highest HH income at Rs.187.7 thousand, though its performance in terms of growth was the minimum. This was followed by Mandi (159.8 thousand) and Chhindwara (Rs. 158.8 thousand). Beneficiaries in Bikaner, Kanpur Dehat and Satara had the lowest HH income (Rs.54 to 62 thousand) (Annexure **Table B16**).

Figure 3.2 presents household income by source such as agricultural income, wage income, trade and business income etc. Agriculture and allied income accounts for above 60% of total household income. Note that income from MGNREGA has marginally fallen by about 1 percent from Rs. 9.7 thousand to 9.6 thousand, yet it continues to account for above 10% of total income. It thus plays a major supplementary role to income earned from normal economic activities.

Figure 3.2: Income of HH from different sources before and after asset creation (Rs '000)



Source: IEG Field survey

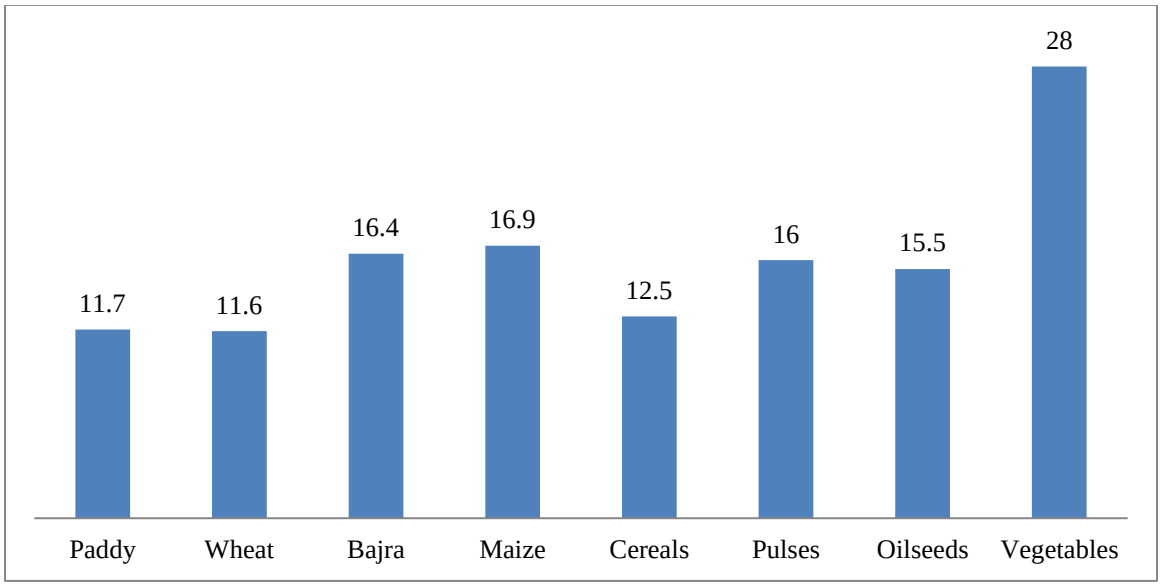
Income from agriculture and allied activities has changed by about 14 percent across the districts. Variation across districts are not observed to be large growth rate varied from 18 percent in district Uttara Kannada of Karnataka to 12 percent in Chhindwara district of Madhya Pradesh. Rise in agricultural income can partly be attributed to increase in agricultural production due to improvement in agricultural productivity after the creation of NRM related assets on community or individual land.

3.1.2 Productivity

Productivity of various crops as reported by beneficiaries has increased after the creation of NRM related asset (Figure 3.3). Productivity of paddy and wheat, two main crops are found to be risen by 11.7 percent and 11.6 percent respectively. Vegetables have recorded an impressive growth in productivity by 28 percent. Growth in productivity of pulses and oilseeds showed an increase of 16 percent and 15.5 percent respectively across the selected districts.

Turning to district wise variations, growth in productivity of rice is 35.5 percent in Chhindwara after the creation of asset. Interestingly, households in Bikaner reported productivity growth of 33 percent for food grains .In Kanpur Dehat district of Uttar Pradesh shows a striking growth in pulses productivity while Mahbubnagar of Telangana shows an increase of 34.4 percent in oilseeds productivity. The productivity growth rate of different crops is shown in Annexure **Table B17** across the selected districts.

Figure 3.3: Growth Rate Productivity of Different Crops of the Selected Households after Assets Creation



Source: IEG Field Survey

We next examine if productivity rise noted above had an influence on income rise. A simple multiple regression is run to find out the significance of agricultural productivity is affecting the change in income.

$$\mathbf{Y = \alpha + \beta X}$$

Where Y = %Change in income and X= %Change in cereals productivity. The results are given in Table 3.1.

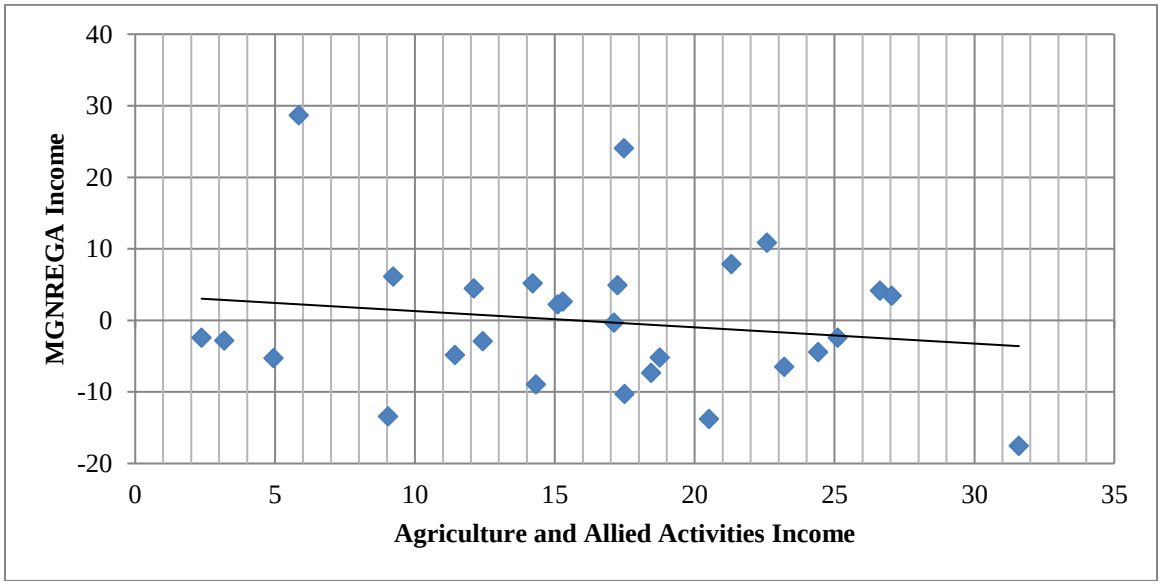
Table 3.1: Regression results for Change in Income

Change in income	Coefficients	Std. Err.	t	P>t	[95% Conf. Interval]
Productivity	0.272152	0.114732	2.37	0.025	(0.037134 ; 0.50717)
_cons	7.901747	1.741764	4.54	0	(4.333905 ; 11.46959)

It is found that change in productivity has got a positive influence on change in income. Productivity increases by 1 percent leads to income rise by 0.27 percent with vary a significant coefficient.

We have noted above that MGNREGA wage income has reduced by about 1 percent after the asset creation. During the field visits, some respondents had observed that a rise in agricultural income had led to reduced dependence on MGNREGA earnings. In Figure 3.4, we have plotted growth in income from agriculture and allied sector and MGNREGA wage income across districts. It may be seen that there is a mild negative relationship between agriculture and allied sector income growth and MGNREGA wage income change.

Figure 3.4: Relationship between growth in Agricultural income and MGNREGA income



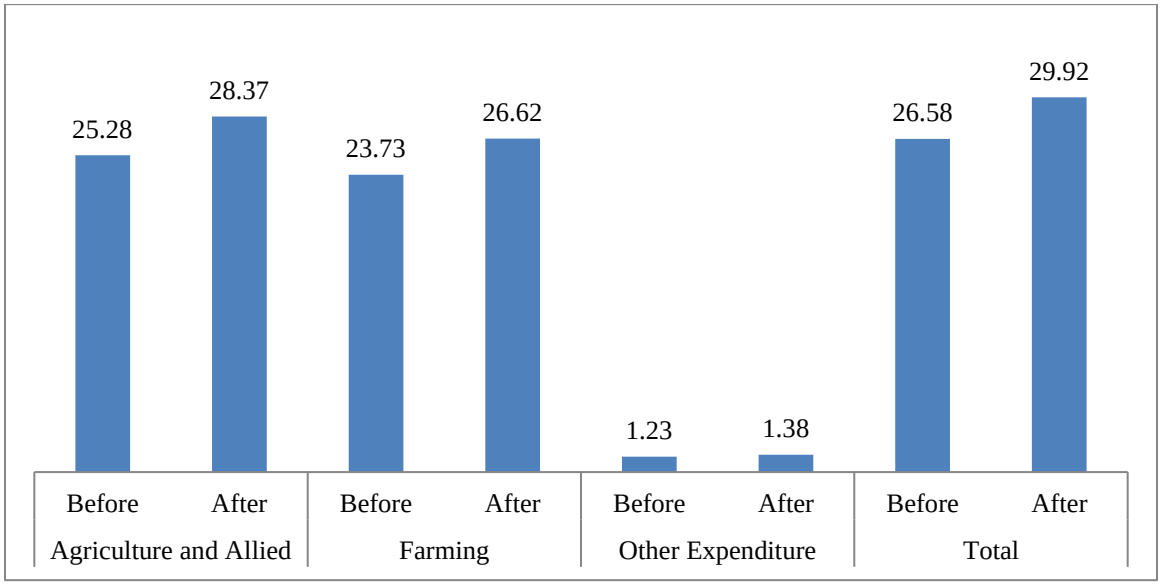
Source: IEG field survey

3.1.3 Production Expenditure

Annual production related expenditure per household has increased from 27 thousand to 30 thousand with a growth rate of 12.6 percent (Figure 3.5). Some districts namely, Nagaon,

Bikaner, Birbhum, Pathanamthitta and Mandi experienced more than 20 percent rise in production expenditure. Expenditure on agricultural activities is the dominant part of this expenditure which rose by 12.2 percent i.e. from 25 thousand to 28 thousand. The average annual expenditure of the surveyed households in all districts has been shown in Annexure Table B18.

Figure 3.5: Production Expenditure of HH before and after asset creation (Rs '000)

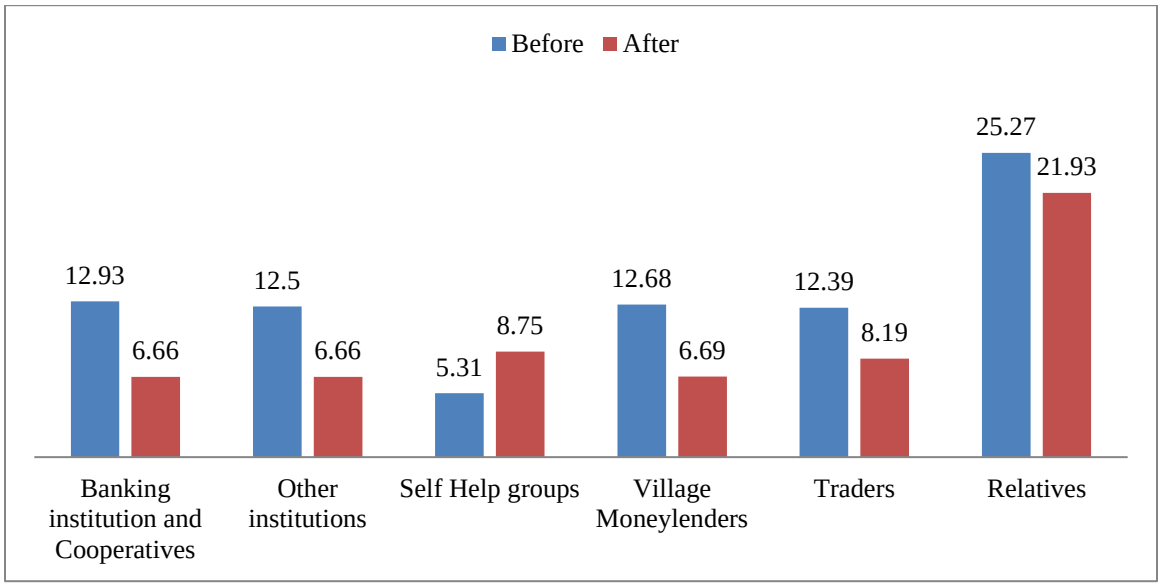


Source: IEG Field survey

3.1.4 Household Credit

The survey also enquired about the credit liability of the beneficiary households. An increase in the burden of outstanding loan is likely to have a negative impact on the sustainability of the rural livelihood of households. Figure 3.6 depicts the percent of households who obtained credit from different sources before and after creation of assets. It is observed that percentage of households taking credit from both institutional and non-institutional sources has reduced after the creation of the MGNREGA assets except that from SHGs. The fall in credit incidence from non-institutional source may particularly be noted. The rise in income has possibly helped the households to reduce their debt burden benefiting them in the long run.

Figure 3.6: HH obtained credit from different Sources before and after the creation of asset



Source: IEG Field survey

3.2 Alternative livelihood opportunities

Creation of NRM assets under MGNREGA has undoubtedly improved water availability, irrigation potential and thereby land productivity of the rural areas. In addition to benefiting from increased land productivity due to assets creation, the small and marginal farmers are also increasing their income either by scaling up the previous livelihood activity or by adding up new activity that can further strengthen their livelihood options.

Table 3.2 and Table3.3, respectively represent the new livelihood activity taken up and previous activity scaled up by the households in different districts after the creation of assets. 10 out of 30 surveyed districts have reported new livelihood activity taken up by the households during the reference period of 2 years while the rest 20 districts did not report any new activity during the same period (Table 3.2). About 14 per cent of the households in all reported districts have taken up new activity. Proportion of households taking up new activity is observed to be the highest in Chhatarpur districts (nearly 28 per cent) followed by Neemuch and Rajnandgaon (25 per cent in each). Horticulture and fisheries were the most preferred options among all new activity taken up by different households though cash crops and spices were also adopted in some districts.

Table 3.2: Households reporting new activity taken up after assets creation

District	% of HH	Name of activity
Chhatarpur	27.5	Horticulture
Chhindwara	7.5	Horticulture, Cereal grains
Hathras	10.0	Fisheries
Jalna	20.0	Cash crop, Horticulture, Pulses, Oilseed, Spices
Kanpur Dehat	5.0	Horticulture
Maharajganj	10.0	Fisheries, Livestock
Neemuch	25.0	Spices, Cereal grains, Horticulture, Non-farm (mobile shop)
North Tripura	5.0	Fisheries
Rajnandgaon	25.0	Fisheries, Poultry, Livestock
Sawai Madhopur	5.0	Horticulture
All Districts	**14.0**	

Source: IEG field survey data

Table 3.3: Households reporting scaled up activity after assets creation

District	% of HH	Name of activity
Anantapur	10	Cereal grains
Boudh	15	Cereal grains, Oilseed, Pulses
Chhatarpur	2.5	Livestock
Chhindwara	25	Horticulture, Cereal grains, Pulses
Kanchipuram	10	Cereal grains
Kolar	20	Horticulture, Cereal grains
Mahbubnagar	7.5	Cereal grains
Maharajganj	2.5	Livestock
Mandi	22.5	Cereal grains, Pulses
Muktsar	2.5	Cereal grains
Nagaon	5	Horticulture
Neemach	7.5	Horticulture, Livestock, Spices
North tripura	17.5	Fisheries, Cash crop
Pathanamthitta	5	Spices
Samastipur	5	Livestock
Satara	7.5	Pulses
Uttara Kannada	25	Horticulture, Cereal grains, Oilseed, Cash crop
Vizianagaram	37.5	Cereal grains
Birbhum	15	Cereal grains
All Districts	**12.8**	

Source: IEG field survey data

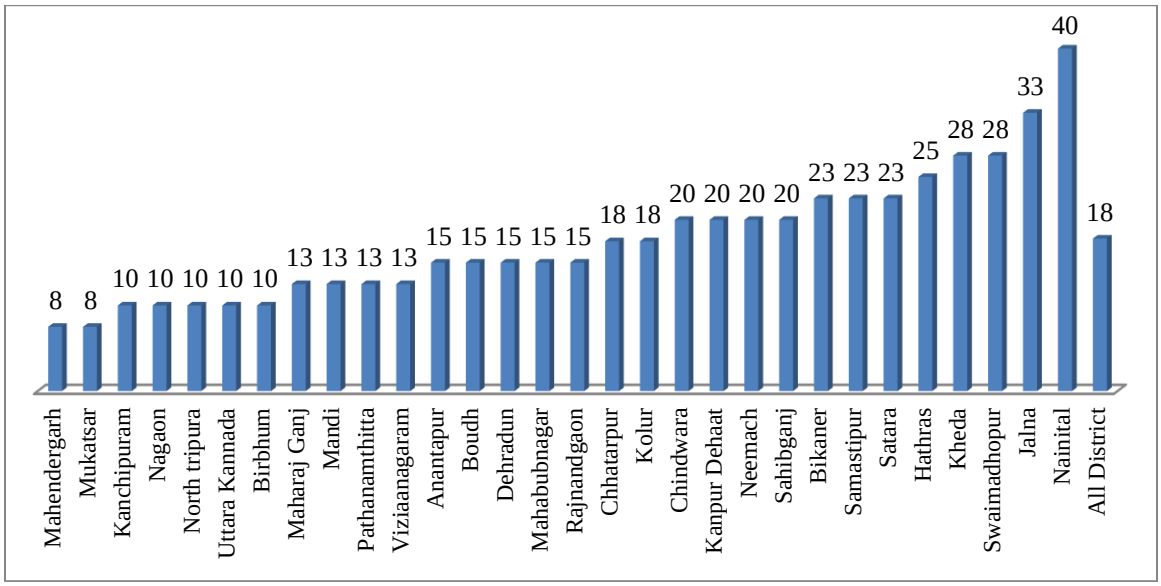
Households in 19 of the 30 surveyed districts were found to have scaled up of their previous activity to enhance their income (Table 3.3). No scaled up activity was reported in other 11 districts during the reference period. About 13 per cent of the total households in all reported districts scaled up some livelihood activities. Vizianagaram account for the highest proportion of households (38 per cent) scaling up their means of livelihood after assets creation followed by Chhindwara, Uttara Kannada (25 per cent of households in each) and Mandi districts (23 per cent). Cereal production was the most preferred activity scaled up by the different households followed by horticulture and livestock.

3.3 Migration

Providing income opportunities to rural population nearer to their home may reduce distress of rural migration. Creation of durable assets under MGNREGA has improved local livelihood opportunity that reduces the push factor for migration. Figure 3.7 shows level of migration of rural population in different surveyed districts before creation of assets. About 18 per cent of the total surveyed households were migrating from different districts. Among all the surveyed districts, the highest migration was reported in Nainital district which had as high as 40 per cent migrant households and the lowest in Mahendragarh district at 8 per cent. The migration from hilly regions like Nainital may be attributed to hardship of life in hills such as lack of proper medical and educational facilities, poor transport facilities and inaccessibility to markets etc. (Mamgain and Reddy, 2016).

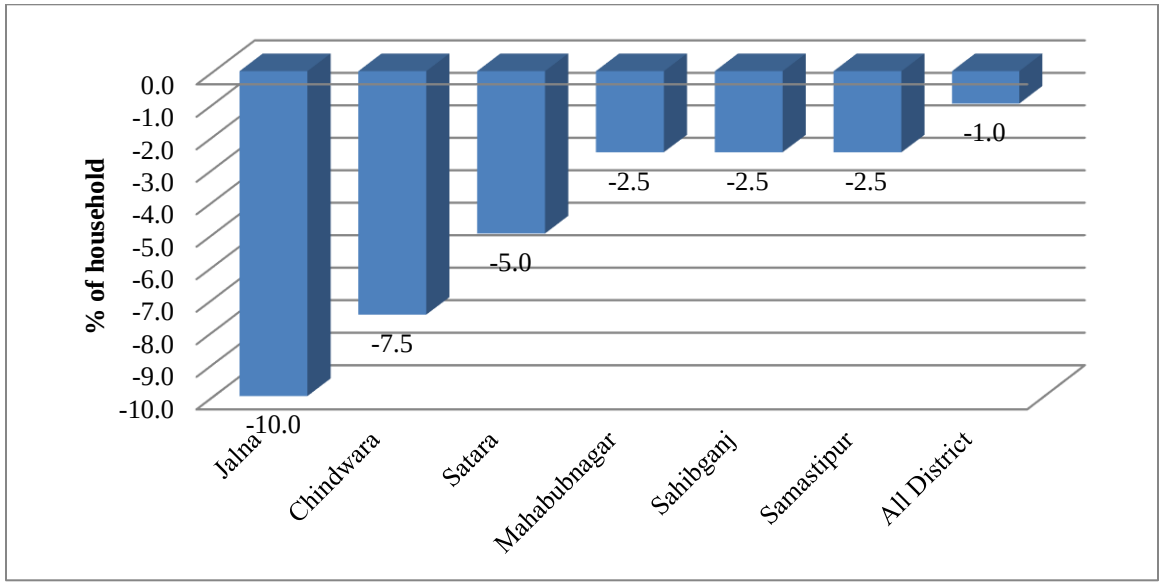
After creation of the assets, 17% of households in all districts reported migration which meant a fall of 1% compared to before assets creation situation. This average change was due to drop in migration in 6 districts shown in Figure 3.8. Out of these districts, 10 per cent of the households in Jalna district reported to have stopped migrating after creation of assets followed by Chhindwara (7.5 per cent) and Satara (5.0 per cent). Households surveyed in other 23 districts did not report change in their migration status before and after creation of assets.

Figure 3.7: Level of Migration before Creation of Assets (%)



Source: IEG field survey data

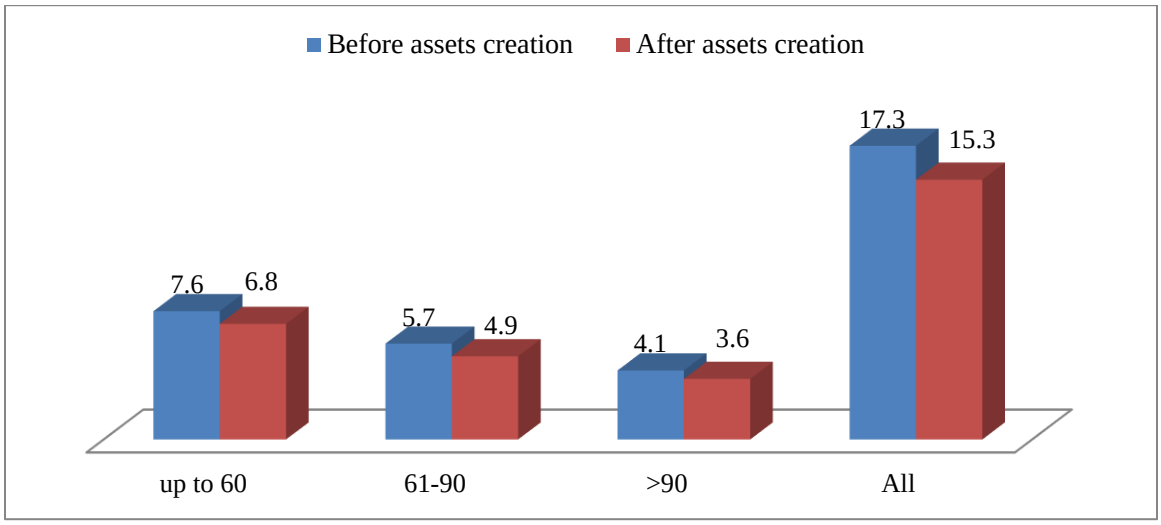
Figure 3.8: Change in Households Migrating after Creation of Assets (%)



Source: IEG Field survey data

Figure 3.9 shows distribution of migrating households by number of days of migration. It may be seen that 7.6% households migrated for a period up to 60 days, 5.7% HH for 61-90 days and the rest for more than 90 days before creation of assets. Overall 2% households reported reduced number of days of migration.

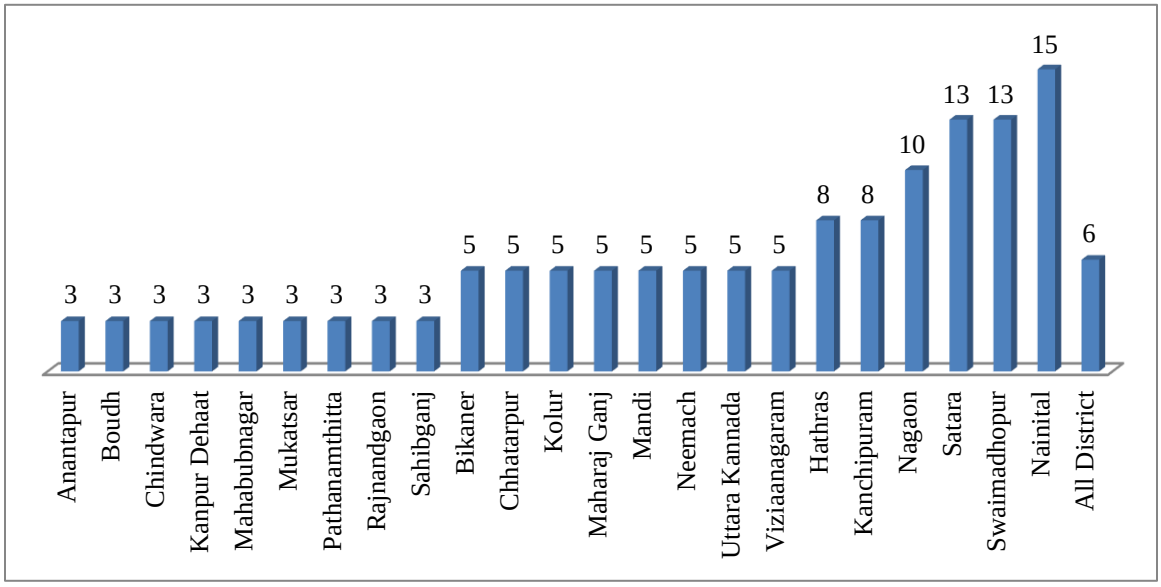
Figure 3.9: Distribution of households by number of days of migration



Source: IEG Field survey data

Households were also asked whether they were migrating willingly or not. In 23 districts of the 30 surveyed districts, about 6 per cent of the households reported migration without will (Figure 3.10) due to compulsions. Absence of economic opportunities in the normal place of residence acts as a push factor for migration decision. Such push factor is absent in 7 districts, namely Dehradun, Jalna, Birbhum, Kheda, Mahendragarh, North Tripura and Samastipur where households do not report any unwilling migration.

Figure 3.10: Percentage of Household reporting migration without will



Source: IEG field survey data

3.4 Determinants of Migration

In order to examine what factors influence household decision to migrate Logistic regression explained earlier is used and the results are presented in Table 3.4. It can be seen from the table that households with new activity or scaled up existing activity after assets creation have significant (at 1% level) impact on household migration. Households reporting new/scaled up activity are less likely to migrate by 57.5 per cent (0.425*100-100) as compared to the households not taking up new/ scaled up activity. We had seen earlier that creation of NRM assets on individual land makes the households to take up new activity or scale up the existing livelihood activity. This leads to increased income opportunity near their home and consequently likelihood of migration falls.

Credit and household size both have a positive effect on inducing migration. The odds of migration increase by 27.5 percent with increase in percentage of households taking credit and by 13.7 per cent if household size is larger by one unit. Effect of credit on migration is not significant, though it has a tendency to induce households to migrate. Household size, however, has a significant positive effect on migration indicating larger households are more likely to migrate.

Table 3.4: Determination of the Factors Affecting Migration

Household's migration		**Odds Ratio**	**P>z**	**[95% Confidence Interval]**
New/scaled up activity		0.425	0.003	[0.243 ; 0.744]
Credit		1.275	0.122	[0.937 ; 1.735]
Household size		1.137	0.000	[1.064 ; 1.216]
Household income	Q1 (reference)			
	Q2	2.001	0.007	[1.209 ; 3.311]
	Q3	1.576	0.085	[0.938 ; 2.645]
	Q4	1.388	0.225	[0.817 ; 2.360]
	Q5	1.322	0.306	[0.775 ; 2.255]
Constant		0.063	0.000	[0.036 ; 0.112]

In order to capture effect of income on migration, we have used the five quantile groups discussed in the previous chapter. The groups Q1 to Q5 each represent 20% MGNREGA participating of households when arranged in ascending order of income. Households belonging to Q2 and Q3 groups indicate significant positive impact on likelihood of migration. It can be seen from the table that, as compared to the lowest income group (Q1), the odd ratio of migration

for Q2 income group doubles and increases by 57.6 per cent for quantile group Q3.There is a tendency for the odds ratio to fall further for the higher income groups, though results are not significant. Overall, the result shows that with the increase in income of household chances of migration rises in the beginning and falls after the middle group. Note that MGNREGA participants as a whole are from the low income groups in rural areas and Q1 to Q5 represent further subdivision of the participants. Thus, chances of the very poor in Q1 group migrating is the least possibly because they do not possess the capability to work in a new environment. But, the likelihood factor increases for Q2 group and falls thereafter as households move up the income scale in their own environment.

In a nutshell, factors affecting migration among MGNREGA beneficiary households indicate that different push factors - debt, household size and low income- are responsible for migration. As households find an opportunity to scale up their activity or take up new activity through programmes such as the MGNREGA, incidence of migration falls.

Chapter 4

Non-Tangible Benefits and Sustainable Resource Index

MGNREGA was initiated with an objective to provide employment opportunities to rural people by creation of assets in villages. The assets created were found to be useful for community by building necessary rural infrastructure and by enhancing productivity of agricultural land benefiting the rural households financially. The asset so created offered other non-tangible benefits related to health, environment or other economic opportunities.

Focus group discussions were conducted in gram panchayats to discuss about different aspects of MGNREGA. This chapter relates to responses received in focus group discussion with beneficiary groups. While the earlier chapter mostly dealt with quantitative dimensions of NREGA impact, this chapter based on FGDs refers to qualitative or non-tangible dimensions. It was found that about 65% of beneficiary groups believed that 30% to 70% of assets created in last three years were providing them non-tangible benefits in addition to tangible benefits. Another 23% responded more than 70% of assets involve non-tangible benefits while balance 12% reported less than 30% of assets with similar benefits.

Table 4.1: % distribution of Non-tangible Benefits

% of Assets Created	Groups getting benefits (%)
>70%	23
30%-70%	65
<30%	12

Source: Field survey data

MGNREGA works involve various kinds of stakeholders for planning and execution of activities for rural beneficiaries on a large scale. While addressing the matter of non-tangible benefits, perspectives and concerns of different stakeholders including those of Gram Rozgar Sahayak were also taken up for discussion. It was observed that almost all the beneficiaries and Gram panchayat officials found assets to be useful for village community.

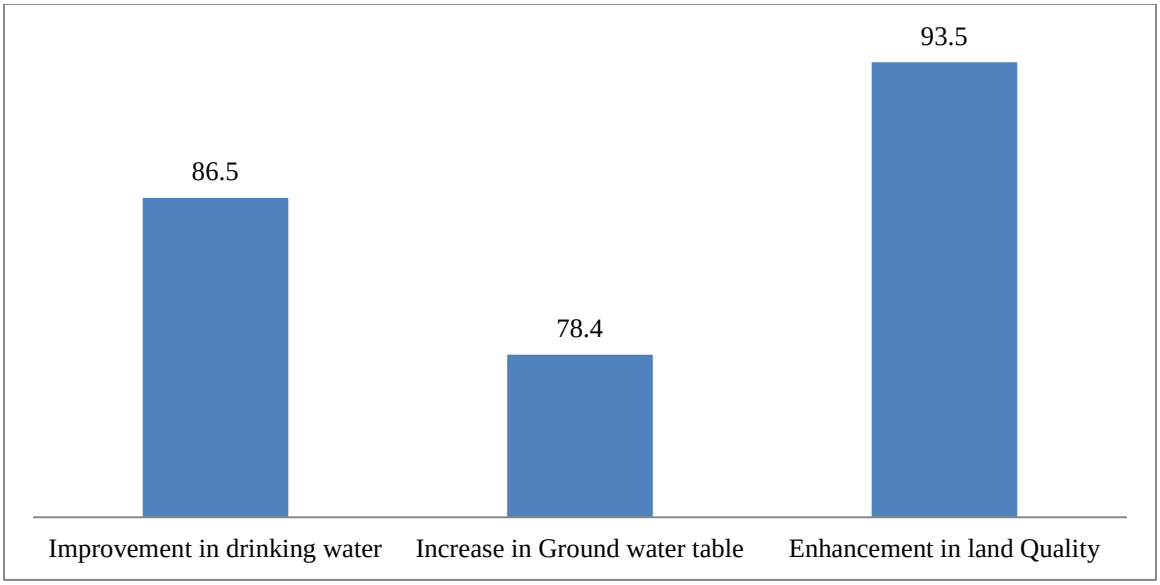
4.1: Environmental Benefits: Household responses

MGNREGA has undoubtedly benefited natural resources by conserving soil and water which in turn impacted beneficiaries positively by improving the quality of land or by increasing the access to ground water table, drinking water and water for livestock. The assessment is based on

close interaction of beneficiaries with nature and its resources, perception of beneficiaries can be considered as good source of information.

As per the findings, it was found that about 86.5% of beneficiaries believed there was better access to drinking water after asset creation. Similarly, it was also revealed that only 78.4% of beneficiaries found increase in ground water table due to creation of NRM related assets. Apart from this, 93% beneficiaries also observed a change in quality of land due land development activities under MGNREGA on either individual land or common land. Managing the natural resources by building necessary assets under scheme is thus perceived to have helped farmers in sustaining the livelihoods.

Figure 4.1: Environmental benefits (% of households)



Source: Field survey data

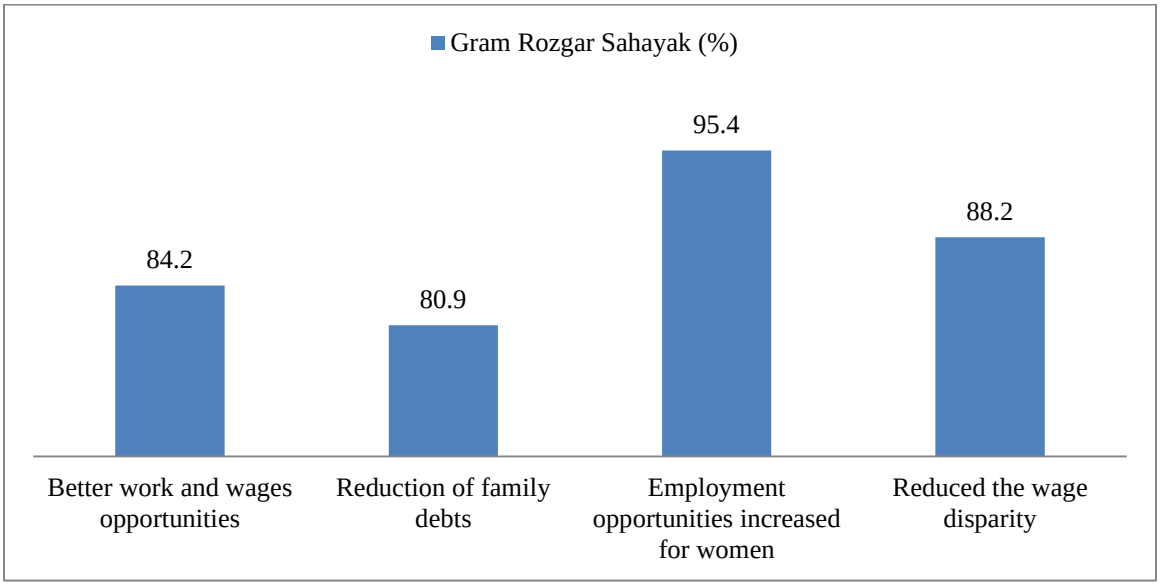
4.2: Other Benefits: at the GP level response

4.2.1: Indirect Economic Benefits

Economic benefits to beneficiaries in terms of income, agricultural productivity, access to diversified livelihood options etc. have already been discussed. These benefits are also believed to initiate a positive trend in society which can help workers/labourers in other market and non-market based opportunities. Besides, there are certain indirect benefits which cannot be directly observed by household beneficiaries but can be evident to the implementing agencies. Therefore,

Gram Panchayat officials, directly working with both individual beneficiaries as well as higher authority at Block or District level revealed some of these indirect economic benefits. For instance, 96.2% of GP officials revealed that MGNREGA has helped rural women with better employment opportunities by working within 5kms and 88% of GP officials also stated a reduction in gender wage disparity. It was felt that additional income opportunity has helped beneficiaries to reduce the family indebtedness. Figure 4.2 documents some indirect economic benefits.

Figure 4.2 Indirect Economic Benefits at the GP level



Source: Field survey data

4.2.2: Health Benefits

Assets created under MGNREGA also influenced health conditions of beneficiaries. Assets creation such as farm ponds, dug-wells, soak pits, recharge pits has offered health benefits in terms of good quality of water. Also, drainage related works benefited the areas affected by water logging by creating assets which are helpful in draining out excess water. Besides, convergence with Swachh Bharat Abhiyan in rural sanitation works (Non-NRM) also promoted good health conditions in rural areas. 90.4% of gram panchayat officials revealed that households have benefited through improved sanitation and hygiene.

4.4: Sustainable Resource Index

Most of the rural policy intervention cannot be considered successful if it does not provide sustainability to rural livelihoods. Sustainability for rural households refers to enhancing capabilities of people to enable them to exploit diverse resources which can, in turn, help them in sustaining their livelihoods during external shocks and stresses (Chambers and Conway, 1991). Agriculture, the prime livelihood activity for rural households depends on several natural resources such as land quality, water availability etc. MGNREGA through NRM asset creation on individual or community land has tried to enhance these natural resources.

The numbers discussed above are for the selected 30 districts taken together. There are, however, wide variations in values for the variables across districts. In order to assess the benefits rural livelihoods derived due to changes in level of natural resources after asset creation, an attempt has been made to create a 'Sustainable Resource Index' (SRI) to rank selected districts on the basis of change in resource sustainability. The index is based on four indicators capturing different aspects:

1. Increase in water table
2. Improvement in availability of drinking water,
3. Enhancement in quality of land, and
4. Maintenance of assets by households.

The first three aspects are directly related to change in quality of resources after asset creation whereas the fourth one describes the willingness and attitude of households to maintain asset quality which can help them in sustaining required benefits.

Sustainable Resource Index is computed as a composite tool to assess the impact of different elements in affecting the level of sustainability of rural livelihood. The index is calculated using percentage of positive responses by beneficiaries in the selected districts regarding change in the above dimensions due to creation of NRM assets. The percentage responses for different indicators are converted into a normalized index using the max-min method used for Human Development Index by the UNDP:

$$I_i = \frac{X_i - Min_i}{Max_i - Min_i}$$

Where I_i = normalized value of the i-th observation

X_i = Observed value of the i-th observation

Max = Maximum value of the indicator across all observations

Min = Minimum value of the indicator across all observations

The individual indices are aggregated into an overall "sustainable resource index' for each selected district using arithmetic mean of the normalized value of the 4 indicators. The weights for the indicators implied in this process are equal. The computed index is used to rank the selected districts. Table 4.2 shows the values of individual indices and overall SRI for selected districts. SRI is then used to rank districts for sustainability.

The UNDP's Human Development Index approach followed for the construction of the SRI helps in ranking the districts and a district gets a score of 1 by construction, if it shows the best performance on all the indicators. Similarly, the lowest ranking district on an indicator gets a score 0. As Table 4.2 reveals Kanchipuram ranks the highest on the overall index followed by Satara, Jalna, Kolar and Rajnandgaon. These districts have a value of 0.95 or above by sustainable resource index where NRM assets have benefited households in improving the natural resource base. Mukhtsar stands at the bottom in terms of SRI, even though it had the highest level of income among all the selected districts as noted in Chapter 3. Kheda, Kanpur Dehat, Nagaon and Chhatarpur are among the other lowest ranking districts.

Each indicator is important to address resource sustainability and therefore, an assessment of districts on the basis of performance in each of the indicators is important. As per the analysis, it has been found that all the beneficiaries in the districts Mahbubnagar, Neemuch and Vizianagaram observed the increase in water table whereas none of the beneficiaries in district Muktsar found any change in the water table. Similarly, beneficiaries of the district Kanchipuram, Jalna, Rajnandgaon and Uttara Kannada found a considerable improvement in the availability of drinking water in sharp contrast to the responses in the district Samastipur in Bihar. Beneficiaries in about 14 districts namely Kanchipuram, Satara, Jalna, Kolar, Rajnanadgaon, Vizianagarm, Anantapur, Bikaner, Birbhum, Mandi, Pathanamthiita, Dehradun, Sawai Madhopur and Nagaon, found an improvement in the quality of land. In 8 districts viz. Kanchipuram, Satara, Uttara Kannada, Birbhum, Boudh, Chhindwara, Sawai Madhopur, Samastipur, all individual asset beneficiaries were found to be involved in repair and maintenance of asset in order to extract benefits for future use.

Table 4.2: Computation of Sustainable Resource Index

Districts	% of HH reporting maintenance of Asset	% of HH reporting improvement in availability of Drinking water	% of HH reporting enhancement in quality of land	% of HH reporting increase in water table	Index Score	Rank
Kanchipuram	1.000	1.000	1.000	0.923	0.981	1
Satara	1.000	0.923	1.000	0.885	0.95	2
Jalna	0.950	1.000	1.000	0.846	0.95	3
Kolar	0.975	0.897	1.000	0.923	0.95	4
Rajnandgaon	0.825	1.000	1.000	0.962	0.95	5
Vizianagaram	0.800	0.974	1.000	1.000	0.94	6
Uttara Kannada	1.000	1.000	0.875	0.885	0.94	7
Mahabubnagar	0.775	0.974	0.938	1.000	0.92	8
Anantapur	0.775	0.949	1.000	0.962	0.92	9
Bikaner	0.900	0.974	1.000	0.731	0.90	10
Birbhum	1.000	0.641	1.000	0.769	0.85	11
Mandi	0.975	0.949	1.000	0.462	0.85	12
Nainital	0.825	0.897	0.938	0.654	0.83	13
Pathanamthitta	0.400	0.974	1.000	0.923	0.82	14
Dehradun	0.500	0.974	1.000	0.808	0.82	15
Boudh	1.000	0.974	0.750	0.538	0.82	16
Chhindwara	1.000	0.949	0.375	0.885	0.80	17
Maharajganj	0.350	0.949	0.938	0.885	0.78	18
Neemach	0.850	0.974	0.250	1.000	0.77	19
North Tripura	0.825	0.949	0.688	0.577	0.76	20
Sawai Madhopur	1.000	0.692	1.000	0.308	0.75	21
Sahibganj	0.975	0.282	0.688	0.962	0.73	22
Samastipur	1.000	0.000	0.938	0.846	0.70	23
Hathras	0.200	0.821	0.875	0.808	0.68	24
Mahendergarh	0.450	0.846	0.938	0.385	0.65	25
Chhatarpur	0.750	0.692	0.875	0.231	0.64	26
Nagaon	0.000	0.949	1.000	0.577	0.63	27
Kanpur Dehat	0.175	0.641	0.813	0.731	0.59	28
Kheda	0.250	0.923	0.000	0.885	0.51	29
Mukatsar	0.475	0.846	0.250	0.000	0.39	30

Source: IEG Field survey

In order to assess the appropriateness of including the different indicators for the index, correlation coefficient among the indicators was calculated. It was found that indicators are not highly correlated to each other, the maximum being 0.35. Thus, each indicator is important on its own right to assess resource sustainability. Further, it was also found that indicator 'Households maintaining the asset' is moderately correlated with the SRI, with correlation coefficient of 0.62. Similarly, correlation coefficient of two indicators 'enhancement in quality of land' and 'Increase in water table' is 0.60. Indicator 'Improvement in availability of drinking water' has low correlation with SRI with a coefficient of 0.36.

Next, we examine whether variations in the sustainable resource index across districts can be explained by a few factors such as NRM expenditure per worker, average per capita income of households and individual asset beneficiaries. Using these district level variables, a simple multiple-regression is run to find out the significant indicators affecting sustainable resource index.

$$Y = \beta 0 + \beta 1\ X1 + \beta 2\ X2 + \beta 3\ X3$$

Where Y= Sustainable Resource Index, X1= NRM expenditure per worker, and X2 = % of individual asset beneficiaries, and X3=average per capita income. The last variable did not have a significant effect on SRI indicating that per capita income of beneficiaries has no influence on resource sustainability. Hence, it was dropped and the model was re-estimated with only first two independent variables. Results are presented in Table 4.3.

The multiple regression model has $R^2 = 0.450$, which is fairly good given that we are using cross section data. It has been found that both NRM expenditure per worker and % of individual asset beneficiaries in a district have a positive influence on the sustainable resource index and the coefficients are significant. One unit change (Rs. One thousand) in NRM expenditure per worker at district level will increase sustainability index by 0.043 unit which amounts to a 4.3 percentage point rise in the index. Assets on individual land helps in retaining quality of the assets, a prime requisite to sustain the livelihoods. The variable percentage of individual asset beneficiaries has a significant but small effect, the coefficient being 0.002.

Table 4.3: Multiple regression Results for Sustainable Resource Index (Dropping Average Per capita Income)

Model Summary				
Model	**R**	**R Square**	**Adjusted R square**	**Std. Error of the Estimate**
1	0.671	0.450	0.409	0.11165

Coefficients				
Model	**Unstandardized Coefficients**		**t**	**Sig.**
	B	**Std. Error**		
(Constant)	0.514	0.063	8.151	0.000
NRM expenditure/worker	0.043	0.012	3.709	0.001
Individual Asset Beneficiary	0.002	0.001	3.214	0.003

Figure 4.3 plots the NRM expenditure per worker and the SRI across districts. It shows that increase in NRM expenditure can increase the resource sustainability till an expenditure of about Rs. 6000 per worker, but does not seem to help in raising the index further thereafter. Similarly, Figure 4.4 describes that the sustainability of resource rises with increasing proportion of Individual asset holders. It indicates a rising relationship indicating a rise in proportion of individual beneficiaries raises the sustainability index, but remains same or slightly declines after reaching a maximum at about 60%. The evidence thus suggests a good mix of both types of assets.

Figure 4.3: NRM Expenditure and Sustainable Resource Index

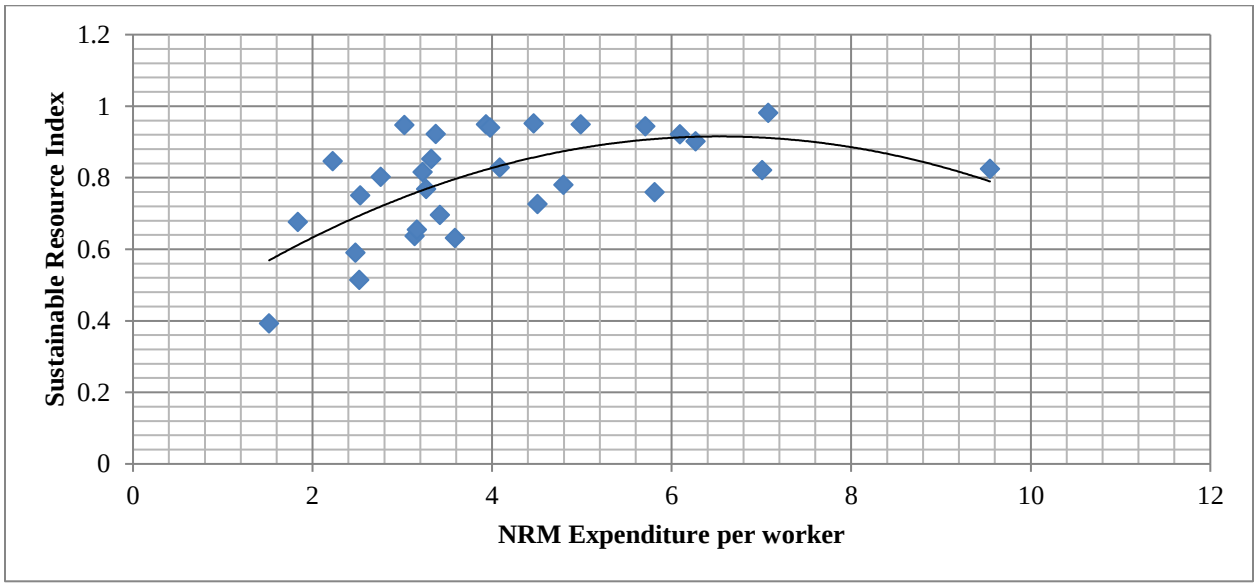
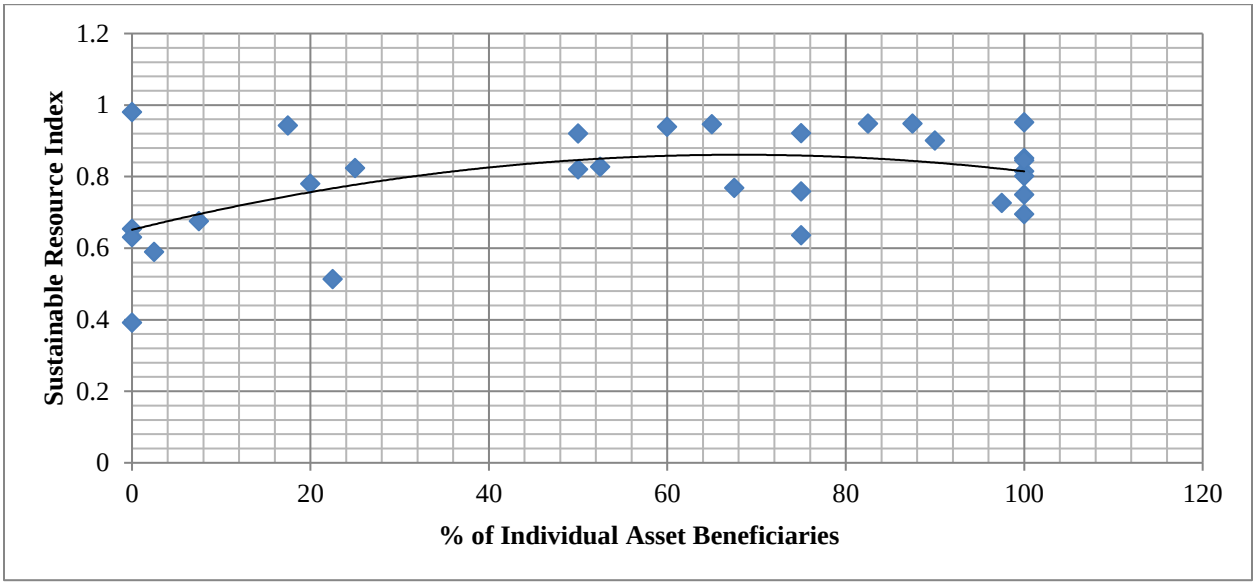


Figure 4.4: Individual Asset and Sustainable Resource Index



In this chapter, we discuss some non-tangible benefits derived by the beneficiaries from NRM assets created in MGNREGA. We then develop a sustainable resource index (SRI) based on four indicators to compare performance of districts from the point of view of sustainability. The analysis based on the index indicates that higher per capita income in a district does not necessarily lead to more sustainability. We then analyse effect of NRM expenditure and proportion of individual assets beneficiaries on the sustainability index. It is found that individual assets are positively associated with resource sustainability. The analysis also shows that sustainability index rises with NRM expenditure per worker up to a point about Rs. 6000 a year and indicates a tendency to fall thereafter.

Chapter -5

Planning and Implementation at Panchayat and Block Levels

5.1 Planning and Implementation

The Operational Guidelines of MGNREGA (MoRD, 2008) states: "Planning is critical to the successful implementation of the Rural Employment Guarantee Scheme (MGNREGA). A key indicator of success is the timely generation of employment within 15 days while ensuring that the design and selection of works are such that good quality assets are developed. The need to act within a time limit necessitates advance planning. The basic aim of the planning process is to ensure that the district is prepared well in advance to offer productive employment opportunities in demand"

One distinct feature of MGNREGA is its bottom-up plan architecture which involves planning and selection of works. This is to be implemented under the mentorship of the Gram Sabha (GS) and the Gram Panchayat (GP). However, few reports suggest that Gram Panchayat Level Plans are not sufficiently consolidated with district level plan and work priorities in MGNREGA tend to follow decisions of the state or district headquarters.

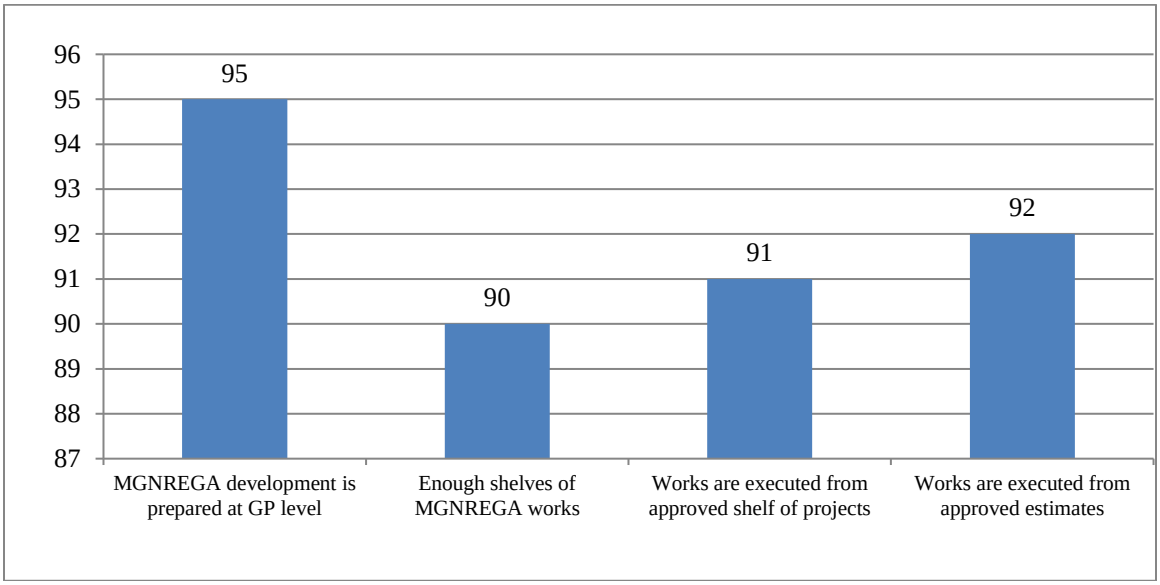
As far as implementation of works are concerned the MGNREGA Act specifies that at least 50% of the works in terms of cost should be executed by the GPs and that GP is the single most important agency for executing works. However, it is felt that there is a need to define the term "implementing" agency more specifically, as it would help in distinguishing GP functions from other supportive functions provided by various government agencies and specialized bodies.

Some of the important functions performed by a Planning Implementation Agency are:

- Preparation of shelf of projects and obtaining technical sanction for the same.
- Obtaining agreement in the GPs in case of work on community land.
- Obtaining administrative sanction for the annual plan containing all works to be taken up in that year
- Maintaining muster rolls and making relevant entries in the job cards of the workers.
- Reporting to the Program Officer (PO) on a regular basis of the job card wise provision of employment.
- Facilitating site inspections by PO or Deputy Plan Coordinator (DPC)
- Ensuring completion of works and preparation of Completion Report etc.

Table 5.1 shows a responses on the bottom-up plan design in MGNREGA in the selected districts based on responses at the GP and block level.

Figure 5.1: Percentage of response of GP officials regarding various aspects of planning and implementation in MGNREGA



Source: IEG Field survey data

Table 5.1: Range in percent of official responses that districts level plan is based on village level plan.

Range (in %) of official responses	Districts
100	Bikaner, Chhatarpur , Jalna, Mandi
>80	Chattarpur, Dehradun, Hathras, Kheda, Kolar, Kanchipuram Mahbubnagar, Maharajganj, Nainital, Neemuch, Rajnandgaon, Satara, Sawai Madhopur, Uttar Kannada, Vizianagram
60 - 80	Boudh, Mahendragarh, Muktsar, Sahibganj
<60	Nagaon, North Tripura, Pathanamthitta, Ananthpur, Birbhum

Source: IEG Field survey data

The preparation of MGNREGA development plan is a three tier process. The plan gets prepared at village or Gram Panchayat level considering the needs and requirements of the villagers. Once the plan gets prepared at the Gram Panchayat Level, it is sent for approval at the Block level. The plan with revision, if any, at the block level is sent to the district level officials to get the final approval of plan. The final nod to the plan is given keeping in mind many issues including total availability of shelves of works and the budget.

The figure 5.1 indicates that 95% of the total GP officials surveyed are of the opinion that MGNREGA work plan is prepared from the GP level plan. At times the plans prepared at the GP level are not reflected in the approved plan at the district level.

Figure 5.1 indicates that GP officials surveyed have predominantly (90%) responded that there are enough shelves of works to meet the estimated demand. According to the observations made in our field survey, one of the major justifications for not enough shelves of MGNREGA work in some cases is the lack of suitable terrain and topography. For example, in Mandi, flood control works could not be undertaken because of its hilly topography as MGNREGA assets could not sustain heavy rains and get washed away.

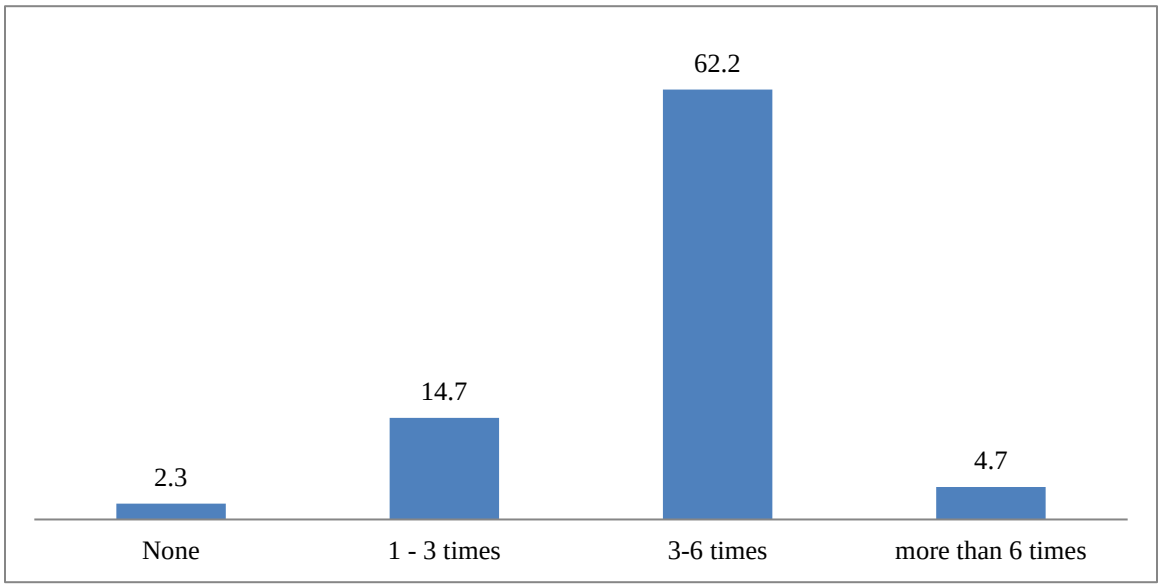
GP officials in our survey again are generally of the opinion that works are executed from approved shelf of projects only. The district-wise differences show that Muktsar has the least execution of works in accordance with the approved shelf of projects. As the district has the highest average total income (Annexure Table B16) out of all the districts surveyed,most people donot feel the need for MGNREGA work. Additionally, wage disparity from market rate in the district is too high for people to work under MGNREGA in Muktsar.

GP officials also felt that works are executed in accordance with the approved estimates. One of the important reasons for works at GP level not executed in some cases in accordance with the approved estimates is lack of flexibility in the 60:40 ratios of wage and material cost.

5.2 Transparency and Inspection

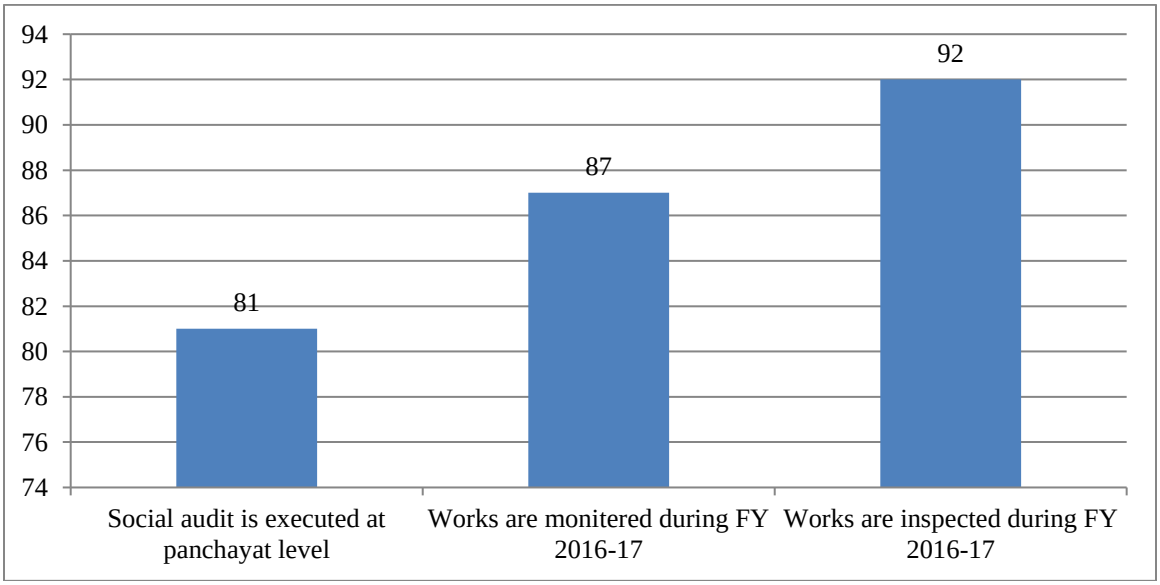
Social Audit is an extremely crucial element in MGNREGA to maintain transparency and to check corruption and misallocation of funds. According to the MGNREGA guidelines the Secretary and Rojgar Sahayak at Gram Panchayat Level, the Programme Officer at block Level and District Programme Coordinator at District level are responsible for ensuring transparency in implementation of MGNREGA. This includes compliance with the provisions of the Right to Information Act, 2005. Apart from social audit, monitoring and inspection are two major important mechanisms to ensure proper regulation of MGNREGA works. Although the terms monitoring and inspection are synonymously used, there is a distinct difference between the two. Inspection implies less frequent check points to assess deviations from the required procedures and anticipated results, while monitoring is refers checking continuously for the purpose of control in the processing of works in order to react quickly to change. Some results found in our survey with regards to social audit, inspections and monitoring are shown in tables given below:

Figure 5.2: Percent of households reporting frequency of social audit between FY2013-2016



Source: IEG Field survey data

Figure 5.3: Average % of GP officials reporting the existence of the various mechanism of transparency maintenance in MGNREGA



Source: IEG Field Survey Data

As evident from Figure 5.2 and Figure 5.3, in our survey the questions regarding the presence of social audit have been asked at both household and Gram Panchayat level. At the household level, it has been found that about 62.2 percent of sampled households are aware about social audit being conducted at a frequency of more than 3-6 times in last four implying, on an average, social audit is being conducted more than once in a year in most cases. Less frequent social

audits are undertaken in some cases as shown in the figure. GP officials have reported that social audit for MGNREGA works are generally executed at the Panchayat level.

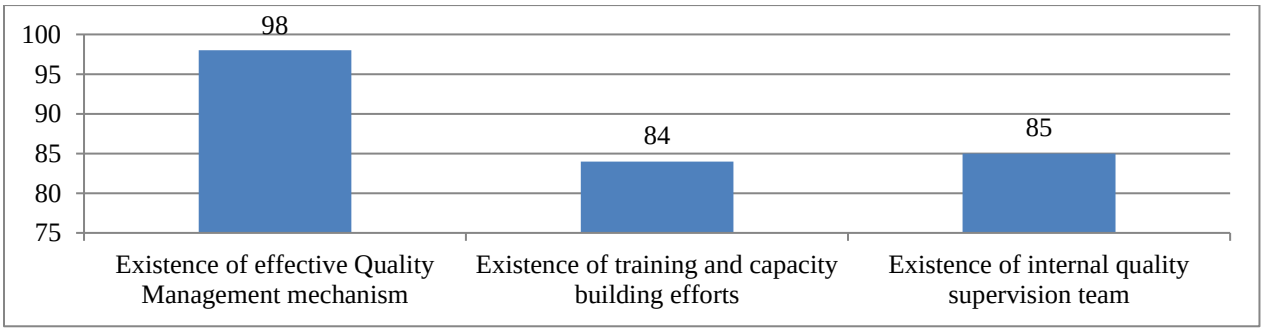
Figure 5.3 also shows percentages of GP officials agreeing that works were monitored and inspected by Programme Officer respectively in the Financial Year 2016-17. In case of monitoring it is seen that, 87% of the total Gram Panchayat officials of all selected districts agreed to the work monitoring and as regards to inspection, 92% of the total GP officials opined that all assets in the selected districts have been inspected by the Programme Officer.

5.3 Internal Quality and Capacity Building

In order to attain the MGNREGA objective of providing secure means of livelihood to the beneficiary households, supervision of assets being created under MGNREGA, maintenance of asset quality and training/capacity building of the persons involved in planning and execution of MGNREGA are some of essential requirements. In the initial period of implementation of MGNREGA, many critics lamented the quality of asset being created in MGNREGA and similar public work programme, there is now increasing evidences to suggest that not only has the asset quality been better than similar government programmes and its usefulness is felt by the community now. The following figures showcase the response of GP officials on the quality management mechanism, internal quality supervision team and capacity building efforts under MGNREGA.

As Fig 5.4 shows almost all the GP officials have again reported that an effective quality management mechanism for MGNREGA works exist. 85% of the GP officials have agreed to existence of internal quality supervision of MGNREGA works. The same figure shows 84% of GP officials agree to presence of training and capacity building of the personnel involved in MGNREGA works.

Figure 5.4: Average % of GP officials reporting regarding the presence of various aspects of Internal Quality and Capacity Building Mechanism

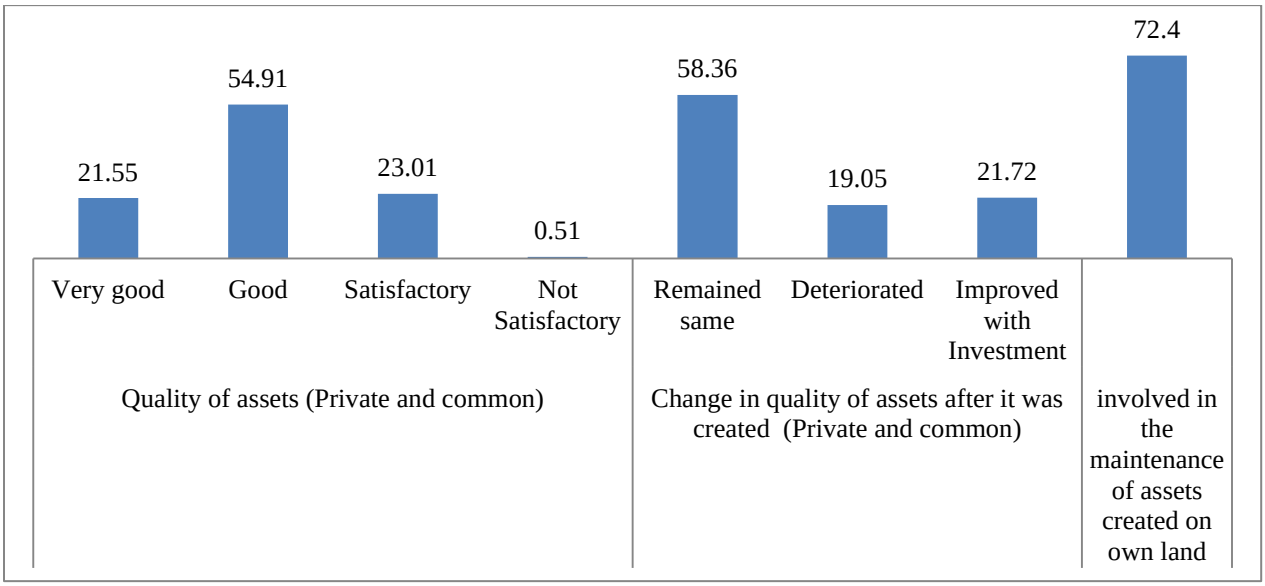


Source: IEG Field Survey Data

However, it was observed that, districts such as Samastipur and Kanpur Dehat did not have a strong quality management and capacity building mechanism for MGNREGA works. The main reason for this attribution is the poor functioning of the local administration in these districts.

The Figure 5.5 depicts the perception of sampled households about the quality of assets created on individual or community land. About 55 percent of households found assets in 'Good' condition i.e. assets created were efficient enough to serve their purpose of improving the livelihoods of people. Apart from the present condition of assets, maintenance of assets is also required to allow beneficiaries to extract continuous benefits of assets in future. Around 58.4 percent of sampled households felt that quality of assets created in last two years has remained same, offering them the required benefits.

Figure 5.5: Quality and Changes in Quality of Asset over time as perceived by households



Source: IEG Field survey data

The survey found that sustenance of private assets is easy with intervention of individual investment to take care of any deterioration of assets. The study found that 72.4 percent of households are willing and investing to maintain individual assets. The maintenance of community assets is however difficult due to lack of accountability on the part of stakeholders. Though for quality management of common assets, authorities have been identified for maintenance.

In sum, MGNREGA presents an example of bottom up planning, overwhelming number of GP officials are of the opinion that district level plan of MGNREGA includes village and block level plan. Planning, monitoring and inspection of rural assets created under MGNREGA is an

essential part of the programme. They have inbuilt mechanism to check quality of assets created under MGNREGA. Since large proportion of rural assets is of individual type, quality of assets is reported to have improved with investment in assets. The needful and frequent changes in MGNREGA guidelines, social audit has increased transparency in MGNREGA.

MGNREGA Success Story

Deepening and Desiltation of Thiruvarmangalam Pond- An Outstanding Convergence Initiative

Deepening and desiltation of waste dumped and poorly maintained Thiruvarmangalam Temple Pond has led the pond into a freshwater fish habitat for surface water run-off harvesting and ground water recharge through the sincere convergence efforts of MGNREGA and PMKSY (Watershed) under a total expenditure of 10.38 lacs. The pond with a capacity of 1575 m^3 falls in ward number 5 of Kadapra Grama Panchayat of Pulikeezhu Block Panchayat under Parumala Micro watershed. The cleaning and laying of geotextiles (on three sides) was done under MGNREGA at a cost of 2.99 lacs with a labour component of 128 man days. The purchase of geo-textiles was from coir corporation Alappuzha. The three sides of the pond were laid with geo textiles whereas dry rubble masonry was done on one side out of the very low soil stability. The activities like desilting, deepening and dry rubble lying were done under PMKSY. The area benefitted under this intervention is 78 ha of land. The intervention paved way for bringing agriculture, land and water management under a single umbrella to increase land and water productivity.

Image 1: Stages of Deepening and Desilting of Thiruvarmangalam Pond

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Annexure A

District Wise Tables

Table A1: Economic Characteristics of the selected households

District	% of BPL card holder	% of PMAY beneficiary	% of Antyodaya card
Anantapur	97.50	27.5	0.0
Bikaner	94.59	11.4	2.7
Birbhum	65.00	25.0	2.5
Boudh	97.50	35.0	0.0
Chhatarpur	97.06	39.4	0.0
Chhindwara	72.50	20.0	2.5
Dehradun	97.50	38.5	0.0
Hathras	76.32	6.7	0.0
Jalna	72.50	17.5	0.0
Kanchipuram	100.00	17.5	0.0
Kanpur Dehat	78.38	46.7	5.4
Kheda	57.50	17.5	0.0
Kolar	95.00	12.5	0.0
Mahbubnagar	97.50	32.5	2.5
Maharajganj	87.50	15.0	2.5
Mahendragarh	57.14	43.8	0.0
Mandi	52.50	25.0	0.0
Muktsar	55.00	12.5	0.0
Nagaon	100.00	52.5	0.0
Nainital	90.00	27.8	2.5
Neemach	72.50	20.0	0.0
North Tripura	100.00	42.5	0.0
Pathanamthitta	95.00	15.0	0.0
Rajnandgaon	80.00	7.5	2.5
Sahebganj	91.89	47.1	5.4
Samastipur	90.00	32.5	2.5
Satara	100.00	27.5	2.5
Sawaimadhopur	86.67	3.6	0.0
Uttara Kannada	95.00	50.0	0.0
Vizianagaram	97.50	47.5	5.0
All Districts	**85.19**	**27.0**	**1.3**

Source: IEG Field survey

Table A2: Religion and Caste of the selected households

Districts	Religion (%)				Caste (%)			
	Hindu	Muslim	Sikh	Christians	SC	ST	OBC	Gen
Anantapur	100	0	0	0	50	0	40	10
Bikaner	100	0	0	0	52.5	0	35	12.5
Birbhum	77.5	22.5	0	0	45	0	37.5	17.5
Boudh	100	0	0	0	60	12.5	27.5	0
Chhatarpur	100	0	0	0	42.5	2.5	37.5	17.5
Chhindwara	100	0	0	0	17.5	37.5	45	0
Dehradun	85	15	0	0	35	5	40	20
Hathras	95	5	0	0	40	0	40	20
Jalna	100	0	0	0	15	10	32.5	42.5
Kanchipuram	100	0	0	0	12.5	0	30	57.5
Kanpur Dehat	100	0	0	0	55	25	17.5	2.5
Kheda	100	0	0	0	2.5	0	87.5	10
Kolar	95	5	0	0	47.5	2.5	25	25
Mahbubnagar	100	0	0	0	40	2.5	57.5	0
Maharajganj	75	25	0	0	32.5	0	65	2.5
Mahendragarh	100	0	0	0	15	0	80	5
Mandi	100	0	0	0	25	12.5	0	62.5
Muktsar	0	0	100	0	42.5	0	12.5	45
Nagaon	52.5	47.5	0	0	15	5	35	45
Nainital	97.5	2.5	0	0	22.5	0	0	77.5
Neemach	100	0	0	0	27.5	27.5	37.5	7.5
North Tripura	80	20	0	0	52.5	10	30	7.5
Pathanamthitta	95	0	0	5	22.5	0	55	22.5
Rajnandgaon	100	0	0	0	5	55	40	0
Sahebganj	80	12.5	0	7.5	5	47.5	47.5	0
Samastipur	100	0	0	0	40	0	60	0
Satara	97.5	2.5	0	0	22.5	0	10	67.5
Sawai Madhopur	92.5	7.5	0	0	20	40	35	5
Uttara Kannada	100	0	0	0	52.5	7.5	0	40
Vizianagaram	82.5	10	7.5	0	15	20	27.5	37.5
All Districts	**90.2**	**5.8**	**3.6**	**0.4**	**31.0**	**10.8**	**36.3**	**22.0**

Source: IEG Field survey

Table A3: Family Size of the selected households

Districts	Average size of the HH	Average earning member
Anantapur	4.6	2.3
Bikaner	4.8	1.9
Birbhum	4.5	1.9
Boudh	6.1	2.5
Chhatarpur	5.7	2.6
Chhindwara	6.1	3.0
Dehradun	6.4	1.8
Hathras	5.9	2.0
Jalna	6.8	2.4
Kanchipuram	6.6	3.0
Kanpur Dehat	5.8	2.6
Kheda	6.3	2.9
Kolar	7.4	3.0
Mahbubnagar	4.9	2.4
Maharajganj	7.8	2.7
Mahendragarh	5.0	1.5
Mandi	5.9	2.2
Muktsar	6.0	2.4
Nagaon	7.7	2.9
Nainital	5.4	2.1
Neemach	5.9	2.7
North Tripura	5.4	2.2
Pathanamthitta	6.3	2.7
Rajnandgaon	6.5	2.9
Sahebganj	5.9	2.2
Samastipur	5.1	2.5
Satara	6.0	2.0
Sawai Madhopur	4.3	2.0
Uttara Kannada	7.6	3.0
Vizianagaram	5.9	2.6
All Districts	**5.9**	**2.4**

Source: IEG Field survey

Table A4 Share of Women MGNREGA workers in the selected households

Districts	% share of women MGNREGA workers
Anantapur	50.0
Bikaner	44.3
Birbhum	31.3
Boudh	24.0
Chhatarpur	40.0
Chhindwara	44.8
Dehradun	14.9
Hathras	16.7
Jalna	32.3
Kanchipuram	47.4
Kanpur Dehat	42.3
Kheda	35.3
Kolar	42.0
Mahbubnagar	47.4
Maharajganj	37.7
Mahendragarh	21.9
Mandi	53.6
Muktsar	50.0
Nagaon	42.9
Nainital	32.3
Neemach	33.3
North Tripura	47.0
Pathanamthitta	49.4
Rajnandgaon	50.0
Sahebganj	28.6
Samastipur	41.8
Satara	18.4
Sawai Madhopur	48.7
Uttara Kannada	46.3
Vizianagaram	48.1
All Districts	40.2

Source: IEG Field survey

Table A5: Educational Profile of the selected households

Districts	Education (%)								
	Illiterate	With no formal degree	Up to V	Up to VII	HS	Diploma	UG	PG	Other
Anantapur	15	7.5	35	10	20	7.5	0	0	5
Bikaner	12.5	7.5	30	20	22.5	5	0	2.5	0
Birbhum	2.5	15	5	25	27.5	15	2.5	7.5	0
Boudh	12.5	7.5	25	22.5	12.5	20	0	0	0
Chhatarpur	15	10	42.5	25	5	2.5	0	0	0
Chhindwara	25	15	15	12.5	10	17.5	0	5	0
Dehradun	20	0	25	35	12.5	7.5	0	0	0
Hathras	15	2.5	25	12.5	25	10	0	7.5	2.5
Jalna	27.5	0	12.5	15	27.5	10	0	5	2.5
Kanchipuram	17.5	5	15	20	20	20	2.5	0	0
Kanpur Dehat	22.5	2.5	40	17.5	2.5	15	0	0	0
Kheda	7.5	2.5	12.5	27.5	32.5	15	0	2.5	0
Kolar	5	5	30	32.5	22.5	5	0	0	0
Mahbubnagar	37.5	15	17.5	12.5	12.5	0	0	5	0
Maharajganj	25	15	27.5	12.5	12.5	7.5	0	0	0
Mahendragarh	2.5	2.5	12.5	25	35	17.5	0	5	0
Mandi	5	5	17.5	17.5	22.5	20	2.5	5	5
Muktsar	25	2.5	25	12.5	20	12.5	0	2.5	0
Nagaon	20	10	32.5	12.5	15	10	0	0	0
Nainital	2.5	7.5	17.5	17.5	25	12.5	0	15	2.5
Neemach	12.5	7.5	17.5	40	15	2.5	2.5	2.5	0
North Tripura	2.5	5	27.5	45	17.5	2.5	0	0	0
Pathanamthitta	2.5	7.5	7.5	30	45	5	2.5	0	0
Rajnandgaon	20	0	25	37.5	15	2.5	0	0	0
Sahebganj	5	5	17.5	15	17.5	25	0	12.5	2.5
Samastipur	12.5	17.5	20	27.5	10	10	2.5	0	0
Satara	0	2.5	7.5	27.5	17.5	35	0	7.5	2.5
Sawai Madhopur	5	20	35	25	7.5	5	0	2.5	0
Uttara Kannada	22.5	17.5	22.5	30	7.5	0	0	0	0
Vizianagaram	15	22.5	20	25	15	0	2.5	0	0
All Districts	**13.8**	**8.1**	**22.1**	**22.9**	**18.3**	**10.6**	**0.6**	**2.9**	**0.8**

Source: IEG Field survey

Table A6: Occupational Profile of the selected households

Districts	Primary Occupation (%)				
	Unskilled Labour	Farmers	Trade and Business	Skilled Worker	Others
Anantapur	27.5	70	0	2.5	0
Bikaner	30	57.5	0	5	7.5
Birbhum	60	22.5	5	12.5	0
Boudh	12.5	85	0	2.5	0
Chhatarpur	25	70	0	2.5	2.5
Chhindwara	0	97.5	0	0	2.5
Dehradun	15	85	0	0	0
Hathras	47.5	50	0	2.5	0
Jalna	2.5	95	2.5	0	0
Kanchipuram	55	20	22.5	0	2.5
Kanpur Dehat	35	60	0	5	0
Kheda	35	37.5	0	2.5	25
Kolar	17.5	77.5	0	5	0
Mahbubnagar	7.5	92.5	0	0	0
Maharajganj	35	62.5	0	2.5	0
Mahendragarh	32.5	37.5	0	7.5	22.5
Mandi	15	32.5	5	5	42.5
Muktsar	12.5	87.5	0	0	0
Nagaon	50	47.5	2.5	0	0
Nainital	7.5	77.5	0	7.5	7.5
Neemach	15	75	2.5	2.5	5
North Tripura	35	57.5	2.5	0	5
Pathanamthitta	45	50	0	5	0
Rajnandgaon	25	72.5	0	0	2.5
Sahebganj	35	50	2.5	12.5	0
Samastipur	42.5	50	0	0	7.5
Satara	0	97.5	0	2.5	0
Sawai Madhopur	17.5	72.5	0	7.5	2.5
Uttara Kannada	10	85	2.5	2.5	0
Vizianagaram	20	77.5	0	0	2.5
All Districts	**25.6**	**65.1**	**1.6**	**3.2**	**4.7**

Source: IEG Field survey

Table A7: Quality of Life: Primary lighting Sources of the selected households

District	% of primary lighting facility		
	Kerosene lamp	**Electricity**	**Others**
Anantapur	0	100	0
Bikaner	5	95	0
Birbhum	7.5	90	2.5
Boudh	0	100	0
Chhatarpur	57.5	40	2.5
Chhindwara	2.5	97.5	0
Dehradun	0	100	0
Hathras	67.5	30	2.5
Jalna	0	100	0
Kanchipuram	0	100	0
Kanpur Dehat	87.5	12.5	0
Kheda	7.5	92.5	0
Kolar	7.5	92.5	0
Mahbubnagar	0	100	0
Maharajganj	52.5	47.5	0
Mahendragarh	0	100	0
Mandi	0	97.5	2.5
Muktsar	0	100	0
Nagaon	32.5	67.5	0
Nainital	0	100	0
Neemach	0	100	0
North Tripura	12.5	87.5	0
Pathanamthitta	0	100	0
Rajnandgaon	0	100	0
Sahebganj	42.5	57.5	0
Samastipur	52.5	47.5	0
Satara	0	100	0
Sawai Madhopur	0	100	0
Uttara Kannada	32.5	60	7.5
Vizianagaram	10	87.5	2.5
All districts	**15.9**	**83.4**	**0.7**

Source: IEG Field survey

Table A8: Quality of Life: Primary cooking facility of the selected households

District	% of primary Cooking facility			
	Wood crop residues	Electricity	LPG	Other
Anantapur	45	15	40	0
Bikaner	52.5	0	17.5	30
Birbhum	72.5	2.5	25	0
Boudh	72.5	0	27.5	0
Chhatarpur	65	0	0	35
Chhindwara	65	0	32.5	2.5
Dehradun	5	2.5	72.5	20
Hathras	20	0	5	75
Jalna	62.5	2.5	35	0
Kanchipuram	2.5	0	97.5	0
Kanpur Dehat	32.5	0	2.5	65
Kheda	65	0	35	0
Kolar	95	0	5	0
Mahbubnagar	65	2.5	32.5	0
Maharajganj	70	0	25	5
Mahendragarh	22.5	0	67.5	10
Mandi	52.5	0	47.5	0
Muktsar	65	0	35	0
Nagaon	85	0	15	0
Nainital	82.5	0	7.5	10
Neemach	42.5	0	57.5	0
North Tripura	72.5	5	17.5	5
Pathanamthitta	25	0	75	0
Rajnandgaon	67.5	0	32.5	0
Sahebganj	47.5	0	12.5	40
Samastipur	32.5	0	32.5	35
Satara	10	2.5	87.5	0
Sawai Madhopur	65	0	10	25
Uttara Kannada	95	0	0	5
Vizianagaram	45	2.5	32.5	20
All districts	**53.3**	**1.2**	**32.8**	**12.8**

Source: IEG Field survey

Table A9: Quality of Life: Primary drinking water source of the selected households

Districts	% of primary source of drinking water for HH						
	Pipe water in residence	Hand pump in residence	Well water in resident	Public hand pump	Public tap /well	Bore well	Canal
Anantapur	0.0	15.0	2.5	5.0	70.0	7.5	0.0
Bikaner	67.5	0.0	2.5	2.5	0.0	27.5	0.0
Birbhum	0.0	70.0	2.5	27.5	0.0	0.0	0.0
Boudh	0.0	22.5	0.0	77.5	0.0	0.0	0.0
Chhatarpur	0.0	15.0	5.0	47.5	10.0	22.5	0.0
Chhindwara	7.5	25.0	5.0	40.0	22.5	0.0	0.0
Dehradun	75.0	0.0	0.0	0.0	25.0	0.0	0.0
Hathras	0.0	60.0	0.0	5.0	35.0	0.0	0.0
Jalna	0.0	0.0	2.5	2.5	55.0	40.0	0.0
Kanchipuram	0.0	0.0	2.5	2.5	95.0	0.0	0.0
Kanpur Dehat	0.0	40.0	0.0	37.5	20.0	2.5	0.0
Kheda	57.5	15.0	2.5	2.5	10.0	0.0	12.5
Kolar	0.0	90.0	0.0	10.0	0.0	0.0	0.0
Mahbubnagar	0.0	7.5	0.0	17.5	62.5	5.0	7.5
Maharajganj	0.0	5.0	0.0	50.0	42.5	2.5	0.0
Mahendragarh	57.5	20.0	0.0	12.5	10.0	0.0	0.0
Mandi	100.0	0.0	0.0	0.0	0.0	0.0	0.0
Muktsar	27.5	62.5	2.5	7.5	0.0	0.0	0.0
Nagaon	7.5	55.0	0.0	37.5	0.0	0.0	0.0
Nainital	82.5	0.0	0.0	0.0	17.5	0.0	0.0
Neemach	37.5	0.0	2.5	10.0	45.0	5.0	0.0
North Tripura	0.0	87.5	0.0	12.5	0.0	0.0	0.0
Pathanamthitta	45.0	20.0	15.0	7.5	12.5	0.0	0.0
Rajnandgaon	0.0	27.5	2.5	47.5	20.0	2.5	0.0
Sahebganj	0.0	20.0	0.0	80.0	0.0	0.0	0.0
Samastipur	0.0	25.0	0.0	75.0	0.0	0.0	0.0
Satara	25.0	0.0	0.0	15.0	60.0	0.0	0.0
Sawai Madhopur	32.5	0.0	0.0	2.5	0.0	45.0	20.0
Uttara Kannada	0.0	27.5	2.5	70.0	0.0	0.0	0.0
Vizianagaram	0.0	17.5	10.0	15.0	52.5	5.0	0.0
All Districts	**20.8**	**24.3**	**2.0**	**24.0**	**22.2**	**5.4**	**1.3**

Source: IEG Field survey

Table A10: Quality of life: Primary toilet facility of the Selected households

Districts	% of primary toilet facility		
	Open Defecation	Own Pit	Others
Anantapur	57.5	42.5	0
Bikaner	27.5	72.5	0
Birbhum	5	95	0
Boudh	85	15	0
Chhatarpur	52.5	47.5	0
Chhindwara	5	95	0
Dehradun	2.5	97.5	0
Hathras	72.5	22.5	5
Jalna	12.5	87.5	0
Kanchipuram	5	95	0
Kanpur Dehat	75	25	0
Kheda	22.5	77.5	0
Kolar	65	32.5	2.5
Mahbubnagar	82.5	17.5	0
Maharajganj	67.5	30	2.5
Mahendragarh	7.5	87.5	5
Mandi	0	100	0
Muktsar	25	75	0
Nagaon	57.5	42.5	0
Nainital	2.5	92.5	5
Neemach	0	100	0
North Tripura	35	65	0
Pathanamthitta	22.5	77.5	0
Rajnandgaon	0	100	0
Sahebganj	70	25	5
Samastipur	82.5	17.5	0
Satara	25	75	0
Sawai Madhopur	5	95	0
Uttara Kannada	100	0	0
Vizianagaram	82.5	17.5	0
All districts	**38.4**	**60.8**	**0.9**

Source: IEG Field Survey

Table A11: Quality of Life: Durable Asset possessed by selected households

Districts	% of Durable Asset						
	Electric Connection	Motorcycle /scooter	Car/jeep	Tractor	B & W TV	Color TV	Mobile
Anantapur	100.0	12.5	0.0	2.5	15.0	85.0	100.0
Bikaner	95.0	17.5	0.0	0.0	25.0	7.5	95.0
Birbhum	92.5	2.5	0.0	0.0	17.5	32.5	82.5
Boudh	100.0	27.5	0.0	0.0	2.5	92.5	100.0
Chhatarpur	40.0	0.0	0.0	0.0	2.5	0.0	85.0
Chhindwara	95.0	52.5	0.0	12.5	12.5	70.0	100.0
Dehradun	97.5	15.0	0.0	0.0	5.0	77.5	97.5
Hathras	25.0	12.5	2.5	5.0	2.5	10.0	97.5
Jalna	100.0	25.0	0.0	2.5	5.0	57.5	100.0
Kanchipuram	100.0	27.5	0.0	0.0	15.0	82.5	100.0
Kanpur Dehat	12.5	2.5	0.0	0.0	0.0	0.0	100.0
Kheda	92.5	47.5	0.0	0.0	12.5	60.0	92.5
Kolar	92.5	40.0	0.0	2.5	0.0	72.5	100.0
Mahabubnagar	100.0	17.5	0.0	7.5	0.0	90.0	100.0
Maharajganj	50.0	5.0	0.0	0.0	2.5	10.0	100.0
Mahendergarh	100.0	32.5	5.0	5.0	0.0	40.0	95.0
Mandi	97.5	35.0	2.5	0.0	0.0	95.0	97.5
Muktsar	100.0	50.0	2.5	5.0	12.5	87.5	100.0
Nagaon	67.5	17.5	0.0	0.0	2.5	65.0	100.0
Nainital	100.0	25.0	0.0	2.5	0.0	62.5	100.0
Neemach	100.0	45.0	0.0	0.0	20.0	57.5	97.5
North Tripura	87.5	35.0	0.0	0.0	0.0	65.0	97.5
Pathanamthitta	100.0	35.0	0.0	0.0	0.0	95.0	100.0
Rajnandgaon	100.0	30.0	0.0	0.0	0.0	50.0	100.0
Sahibganj	70.0	15.0	0.0	2.5	7.5	20.0	97.5
Samastipur	47.5	12.5	0.0	0.0	0.0	27.5	92.5
Satara	100.0	37.5	0.0	5.0	5.0	90.0	100.0
Swaimadhopur	100.0	17.5	0.0	0.0	12.5	15.0	92.5
Uttara Kannada	60.0	15.0	0.0	0.0	0.0	42.5	100.0
Vizianagaram	87.5	25.0	0.0	5.0	2.5	75.0	100.0
All districts	**83.7**	**24.4**	**0.4**	**1.9**	**6.0**	**54.5**	**97.3**

Source: IEG Field Survey

Table A12: Land holding of the selected households

Districts	Average land holding (acre)	
	After Asset	Before Asset
Anantapur	2.46	2.46
Bikaner	6.58	7.04
Birbhum	0.51	0.56
Boudh	2.28	2.27
Chhatarpur	1.77	1.77
Chhindwara	5.63	5.61
Dehradun	1.53	1.53
Hathras	0.97	0.95
Jalna	3.29	3.27
Kanchipuram	0.77	0.77
Kanpur Dehat	0.68	0.68
Kheda	1.38	1.29
Kolar	1.64	1.66
Mahbubnagar	2.82	2.85
Maharajganj	0.86	0.85
Mahendragarh	1.16	1.16
Mandi	1.40	1.53
Muktsar	1.90	1.90
Nagaon	0.72	0.72
Nainital	1.16	1.11
Neemach	2.39	2.39
North Tripura	1.48	1.51
Pathanamthitta	0.95	0.95
Rajnandgaon	4.04	4.07
Sahebganj	1.77	1.64
Samastipur	0.62	0.66
Satara	2.36	2.34
Sawai Madhopur	2.64	2.80
Uttara Kannada	1.31	1.31
Vizianagaram	2.11	2.10
All Districts	**1.97**	**1.99**

Source: IEG Field survey

Table A13: Work participation of selected households

District	% of HH demanded work at the GP level	% of HH getting job after placing demand
Anantapur	100	100
Bikaner	98	100
Birbhum	100	100
Boudh	90	85
Chhatarpur	100	100
Chhindwara	95	95
Dehradun	100	100
Hathras	98	97.5
Jalna	98	97.5
Kanchipuram	100	100
Kanpur Dehat	100	100
Kheda	100	100
Kolar	100	100
Mahbubnagar	100	100
Maharajganj	98	97.5
Mahendragarh	65	65
Mandi	93	95
Muktsar	55	50
Nagaon	100	100
Nainital	100	97.5
Neemach	98	97.5
North Tripura	100	100
Pathanamthitta	100	100
Rajnandgaon	100	100
Sahebganj	100	100
Samastipur	100	100
Satara	100	100
Sawai Madhopur	100	100
Uttara Kannada	100	100
Vizianagaram	100	100
All Districts	**96.2**	**95.9**

Source: IEG Field survey

Table A14: Reasons for demanding work

District	Reasons for demanding the work (%)					Reasons for not demanding the work (%)				
	Need more income sources	Wanted assets to be created on my land	Motivation by relatives/friends	No need to travel far	No specific reasons	Works not available under MGNREGA	MGNREGA wages are very low	No interest in type of work offered	Earned enough money to meet daily needs	No specific reasons
Anantapur	85	0	25	60.0	0.0	0	0	0	0	0
Bikaner	20	12.5	10	72.5	12.5	0	0	0	0	100
Birbhum	65	7.5	2.5	37.5	2.5	0	0	0	0	0
Boudh	65	0	17.5	52.5	0.0	0	100	50	0	0
Chhatarpur	45	0	7.5	97.5	0.0	0	0	0	0	0
Chhindwara	37.5	10	10	50.0	0.0	0	0	0	100	0
Dehradun	45	0	5	50.0	5.0	0	0	0	0	0
Hathras	67.5	2.5	5	35.0	7.5	0	0	0	0	0
Jalna	30	0	15	72.5	2.5	0	100	0	0	0
Kanchipuram	97.5	0	45	57.5	0.0	0	0	0	0	0
Kanpur Dehat	60	2.5	7.5	72.5	12.5	0	0	0	0	0
Kheda	72.5	2.5	20	32.5	2.5	0	0	0	0	0
Kolar	80	0	25	37.5	0.0	0	0	0	0	0
Mahbubnagar	85	0	10	57.5	7.5	0	0	0	0	0
Maharajganj	60	0	2.5	52.5	2.5	0	0	0	0	0
Mahendragarh	7.5	0	5	35.0	50.0	0	7	64	43	36
Mandi	27.5	20	25	77.5	0.0	0	0	0	33	0
Muktsar	45	2.5	20	42.5	0.0	0	11	67	72	0
Nagaon	80	0	45	95.0	0.0	0	0	0	0	0
Nainital	25	10	15	67.5	5.0	0	0	0	0	0
Neemach	42.5	2.5	7.5	52.5	0.0	0	0	0	100	0
North Tripura	47.5	5	7.5	40.0	20.0	0	0	0	0	0
Pathanamthitta	97.5	2.5	12.5	60.0	0.0	0	0	0	0	0
Rajnandgaon	60	12.5	0	45.0	2.5	0	0	0	0	0
Sahebganj	5	12.5	7.5	92.5	7.5	0	0	0	0	0
Samastipur	17.5	17.5	0	90.0	5.0	0	0	0	0	0
Satara	10	0	5	87.5	2.5	0	0	0	0	0
Sawai Madhopur	7.5	27.5	10	67.5	10.0	0	0	0	0	0
Uttara Kannada	97.5	0	72.5	45.0	0.0	0	0	0	0	0
Vizianagaram	77.5	2.5	35	52.5	0.0	0	0	0	0	0
All Districts	**52.1**	**5.1**	**15.8**	**59.6**	**5.3**	**0**	**18**	**51**	**51**	**13**

Source: IEG Field survey

Table A15: Benefits from Individual Asset of the selected Households

District	Kind of benefit(s) they are getting from the creation of asset on individual land under MGNREGA									
	Ground water recharged	Increase in irrigation Potential	Conservation of Soil and water	Proper drainage of water	Improvement in quality of land	Increase cropping area	Increase in cropping intensity	Diverse livelihood opportunities	Fodder availability	Water for Livestock
Anantapur	33	50	25	0	50	0	0	33	0	18
Bikaner	43	45	38	35	40	25	38	5	28	48
Birbhum	0	10	0	5	60	20	0	68	0	0
Boudh	88	88	13	55	95	5	0	75	3	48
Chhatarpur	23	58	0	0	30	43	10	0	18	33
Chhindwara	15	60	28	8	65	0	20	65	0	28
Dehradun	3	10	45	8	35	0	0	43	5	0
Hathras	8	8	5	3	3	0	3	8	0	5
Jalna	40	58	38	40	80	3	5	65	3	15
Kanchipuram	0	0	0	0	0	0	0	0	0	0
Kanpur Dehat	0	0	0	0	0	0	0	0	0	0
Kheda	0	0	23	0	3	0	0	23	0	0
Kolar	15	18	55	0	68	5	0	73	0	5
Mahbubnagar	50	8	68	0	63	5	0	38	0	0
Maharajganj	5	23	3	5	18	0	3	3	5	13
Mahendragarh	0	0	0	0	0	0	0	0	0	0
Mandi	23	30	48	8	90	33	5	73	5	18
Muktsar	0	0	0	0	0	0	0	0	0	0
Nagaon	0	0	0	0	0	0	0	0	0	0
Nainital	5	3	35	8	33	5	5	20	8	3
Neemach	35	60	15	35	58	3	0	45	3	35
North Tripura	43	45	15	15	50	25	0	70	0	10
Pathanamthitta	25	0	25	0	25	0	0	15	0	0
Rajnandgaon	53	58	0	8	8	5	8	5	5	3
Sahebganj	63	90	8	8	10	25	53	23	23	53
Samastipur	5	5	20	0	73	55	3	20	13	5
Satara	25	83	8	10	80	0	28	80	3	13
Sawai Madhopur	0	3	88	83	50	15	25	13	0	0
Uttara Kannada	18	20	33	3	43	8	3	5	3	0
Vizaanagaram	15	15	0	0	13	0	0	13	0	0
All Districts	**21**	**28**	**21**	**11**	**38**	**9**	**7**	**29**	**4**	**12**

Source: IEG Field survey

Table A16: Benefits from Common Assets of the selected Households

District	Kind of benefit(s) they are getting from the creation of asset on community land under MGNREGA										
	Ground water recharged	Irrigation Potential Increased	Conservation of Soil and water	Proper drainage of water	Benefit to crops after plantation	Improved quality of land	Increased area for cultivation	Cropping intensity increased	Improved livelihood opportunities	Fodder Availability	Water for Livestock
Anantapur	2.5	45	0	27.5	0	25	18	0	20	25	25
Bikaner	2.5	7.5	7.5	7.5	0	3	0	0	0	0	8
Birbhum	0	0	0	0.0	0	0	0	0	0	0	0
Boudh	0	0	0	0.0	0	0	0	0	0	0	0
Chhatarpur	25	25	5	17.5	0	0	0	3	3	5	13
Chhindwara	0	0	0	0.0	0	0	0	0	0	0	0
Dehradun	45	42.5	10	20.0	0	5	0	8	23	13	18
Hathras	82.5	65	20	62.5	5	20	0	10	33	20	60
Jalna	2.5	12.5	0	2.5	0	5	0	3	8	0	5
Kanchipuram	0	100	0	5.0	0	100	0	0	8	0	3
Kanpur Dehat	77.5	100	7.5	55.0	0	13	3	0	5	20	53
Kheda	25	25	60	15.0	0	73	0	0	48	0	25
Kolar	0	7.5	5	0.0	0	18	0	0	13	0	0
Mahbubnagar	0	22.5	0	22.5	0	25	0	0	0	10	23
Maharajganj	70	80	15	20.0	0	15	0	0	8	10	45
Mahendragarh	60	95	12.5	60.0	3	15	13	13	23	30	58
Mandi	0	0	0	0.0	0	0	0	0	0	0	0
Muktsar	62.5	52.5	37.5	35.0	0	73	0	8	33	13	15
Nagaon	42.5	72.5	27.5	10.0	0	100	0	0	8	0	23
Nainital	0	47.5	0	0.0	0	35	3	3	0	8	10
Neemach	10	10	25	15.0	18	10	0	0	3	3	15
North Tripura	0	0	25	0.0	0	23	0	0	25	0	0
Pathanamthitta	32.5	75	27.5	22.5	0	75	0	0	10	0	28
Rajnandgaon	42.5	45	10	27.5	5	18	3	13	18	8	25
Sahebganj	0	2.5	0	2.5	0	0	0	0	0	5	3
Samastipur	0	0	0	10.0	0	0	0	0	0	13	0
Satara	0	0	0	0.0	0	0	0	0	0	0	0
Sawai Madhopur	0	0	2.5	5.0	0	0	0	0	0	0	0
Uttara Kannada	12.5	17.5	17.5	5.0	0	33	0	0	0	0	3
Vizianagaram	57.5	70	0	0.0	0	30	50	3	18	58	25
All Districts	**21.75**	**34**	**10.5**	**14.9**	**1**	**24**	**3**	**2**	**10**	**8**	**16**

Source: IEG Field survey

Table A17: Gross average income of the HH from different sources before and after the asset creation (Rs '000)

Districts	Agriculture and Allied		Agriculture Labor wages		MGNREGA income		Wage and payment		Trade and business		Asset* income and Remittances		Total income	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
Ananthpur	59.03	60.43	11.80	12.26	9.41	9.18	6.30	7.45	0.00	0.00	1.13	1.10	87.66	90.41
Bikaner	22.73	29.91	3.21	3.28	9.97	8.22	8.76	10.56	0.00	0.00	1.05	0.88	47.22	54.34
Birbhum	27.68	33.58	8.86	9.63	12.22	13.18	18.95	20.93	1.63	2.10	0.95	1.25	70.28	80.66
Boudh	68.11	76.35	6.83	6.98	12.05	12.59	9.73	9.90	1.63	1.75	2.23	2.00	100.56	109.57
Chattarpur	30.20	38.24	2.05	1.98	12.96	13.50	8.84	8.58	0.00	0.00	1.43	1.63	55.48	63.91
Chhindwara	122.06	137.23	5.93	5.90	10.91	10.59	3.78	3.85	0.50	0.50	0.86	0.45	144.29	158.79
Dehradun	57.64	62.85	12.98	12.88	8.63	7.47	5.40	5.30	0.00	0.00	0.41	0.43	85.05	88.91
Hathras	45.43	54.75	12.29	13.05	5.66	4.88	7.80	8.28	0.00	0.00	1.43	2.04	72.60	82.93
Jalna	58.78	73.13	4.58	4.58	7.88	7.53	6.48	6.95	1.50	1.58	2.08	1.85	81.48	95.86
Kanchipuram	20.39	22.72	2.03	2.03	13.21	12.57	14.90	15.38	9.60	10.35	0.98	0.98	61.10	64.02
Kanpur Dehat	23.74	29.10	2.79	3.13	11.07	12.27	12.30	13.42	0.70	0.75	0.88	0.95	51.46	59.61
Kheda	75.50	79.23	9.65	9.73	9.44	8.94	5.18	5.50	0.45	0.50	1.73	1.55	101.94	105.44
Kolar	59.03	68.05	6.20	6.63	13.37	13.72	13.90	15.10	0.00	0.00	1.20	1.30	93.70	104.79
Maharajganj	66.84	70.75	9.83	13.18	8.41	10.82	5.28	5.53	0.00	0.00	0.20	0.20	91.04	100.97
Mahbubnagar	37.00	43.33	15.40	16.43	11.91	11.87	21.21	21.82	0.00	0.00	5.00	6.50	71.80	79.12
Mahendragarh	38.95	48.73	2.70	3.58	2.49	2.43	13.68	16.25	4.38	5.38	0.00	0.00	87.78	108.22
Mandi	22.48	40.90	0.30	0.30	8.83	8.92	55.70	56.23	5.00	5.00	1.00	1.05	140.72	159.80
Muktsar	155.53	160.48	1.61	1.95	5.68	5.52	11.88	12.48	6.35	6.88	0.45	0.45	181.48	187.74
Nagaon	36.68	46.60	3.65	3.73	10.13	10.48	18.55	19.80	2.00	2.13	1.00	1.05	72.01	83.78
Nainital	41.35	48.58	7.64	7.70	5.93	5.32	7.70	8.25	0.10	0.13	1.50	1.63	64.22	71.60
Neemuch	66.90	77.00	6.34	6.25	11.33	11.58	7.33	7.03	0.90	2.45	0.80	0.75	95.09	106.68
Pathanamthitta	52.38	64.53	1.85	1.93	13.12	12.27	14.60	16.60	1.65	2.00	0.25	0.30	83.84	97.63
Rajnandgaon	45.33	49.51	12.15	15.08	14.43	15.31	16.85	18.80	0.00	0.00	0.73	0.75	89.48	99.46
Sahibganj	54.88	65.00	6.38	6.65	10.07	9.33	9.55	9.93	0.00	0.00	0.25	0.25	81.12	91.15
Samastipur	30.05	35.30	3.05	2.89	7.32	9.08	23.83	24.25	0.50	0.50	1.60	1.53	66.72	73.92
Satara	22.50	26.38	12.05	12.59	7.92	8.31	16.41	18.06	0.00	0.00	11.14	7.86	56.48	62.04
Sawai Madhopur	72.10	82.43	3.00	3.00	7.48	6.81	11.50	11.45	0.00	0.00	1.00	0.50	95.08	104.18
Uttara Kannada	49.09	58.78	2.36	2.80	7.94	3.98	8.50	10.95	0.00	0.00	4.13	4.68	72.01	81.18
Vizianagaram	72.38	85.95	5.53	5.55	12.53	11.88	1.98	2.03	0.00	0.00	0.83	0.85	95.78	108.88
North Tripura	41.66	47.58	8.08	7.93	9.88	10.39	6.01	6.78	0.00	0.00	1.15	1.20	66.78	73.86
All Districts	**52.54**	**60.58**	**6.17**	**6.57**	**9.74**	**9.63**	**12.31**	**13.13**	**1.32**	**1.50**	**1.18**	**1.18**	**85.47**	**94.98**

Source: Field survey * Apart from agricultural land

Table A18: Change in Agricultural Productivity of Surveyed HH due to the creation of asset

District	Growth Rate (Productivity) (%)							
	Paddy	**Wheat**	**Bajra**	**Maize**	**Food Grains**	**Pulses**	**Oilseeds**	**Vegetables**
Anantapur	12.9	0.0	0.0	8.8	13.5	10.5	13.12	3.33
Bikaner	0.0	0.0	33.5	0.0	33.5	29.8	28.09	77.46
Birbhum	16.4	15.7	0.0	0.0	17.2	14	12.6	4.0
Boudh	5.3	3.7	0.0	0.0	5.0	6.6	NA	16.48
Chhatarpur	10.9	24.2	0.0	20.8	22.6	29.2	28.21	14.29
Chhindwara	35.7	18.9	0.0	12.9	16.6	16.7	14.50	17.02
Dehradun	8.2	8.1	0.0	7.5	8.6	NA	NA	70.07
Hathras	20.3	19.9	15.9	0.0	21.0	NA	NA	85.20
Jalna	0.0	14.4	18.5	20.9	16.9	17.6	19.06	21.32
Kanchipuram	8.1	0.0	0.0	22.0	8.1	NA	0.00	NA
Kanpur Dehat	21.3	16.8	26.9	20.7	18.3	50.0	21.96	14.88
Kheda	2.0	6.5	6.3	0.0	4.8	NA	-11.58	37.55
Kolar	5.5	0.0	0.0	0.0	4.9	5.1	NA	46.70
Mahbubnagar	5.4	0.0	-2.3	10.3	5.9	12.7	34.44	3.92
Maharajganj	14.9	14.6	5.0	6.0	14.1	5.3	14.04	-6.71
Mahendragarh	-6.1	8.0	24.0	0.0	11.9	5.9	21.80	NA
Mandi	-12.8	-19.7	0.0	29.8	3.7	NA	NA	72.50
Muktsar	4.4	6.9	0.0	0.0	6.4	11.4	NA	10.00
Nagaon	23.1	0.0	0.0	0.0	23.6	NA	NA	83.42
Nainital	15.4	14.4	10.8	44.1	16.4	13.5	9.52	17.98
Neemach	0.0	6.9	0.0	8.5	10.0	14.2	6.36	18.80
North Tripura	14.1	23.3	0.0	27.7	12.3	12.2	NA	8.00
Pathanamthitta	7.7	0.0	0.0	0.0	7.7	NA	NA	NA
Rajnandgaon	14.0	0.0	0.0	11.1	14.0	11.6	NA	NA
Sahebganj	22.9	45.4	0.0	0.0	22.7	16.7	17.98	NA
Samastipur	20.9	14.5	0.0	0.0	20.3	0.0	NA	7.65
Satara	8.3	10.3	19.1	8.7	13.2	24.4	22.87	8.33
Sawai Madhopur	5.0	7.7	15.3	0.0	10.2	12.0	15.83	NA
Uttara Kannada	12.8	0.0	0.0	5.9	12.5	24.4	10.69	13.65
Vizianagaram	12.5	0.0	1.5	0.0	11.4	NA	NA	NA
All Districts	**11.7**	**11.6**	**16.4**	**16.9**	**12.5**	**16**	**15.5**	**28**

Source: Field survey

Table A19: Expenditure of HH before and after asset creation (Rs '000)

Districts	Agriculture and Allied		Farming		Agriculture Labor		Wage and payment		Trade and business		Total	
	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
Anantapur	25.34	28.39	25.34	28.32	0.08	0.10	0.11	0.12	0.00	0.00	25.85	28.85
Bikaner	10.06	12.55	6.43	8.20	0.15	0.10	0.46	0.59	0.00	0.00	10.86	13.43
Birbhum	13.86	16.86	12.91	15.76	0.00	0.00	0.28	0.40	1.28	1.60	15.44	19.00
Boudh	32.20	37.04	32.20	37.04	0.00	0.00	0.04	0.04	0.50	0.85	33.10	38.05
Chattarpur	16.44	18.94	15.05	17.12	0.18	0.73	0.36	0.43	0.00	0.00	17.72	20.32
Chhindwara	55.69	62.43	53.85	60.38	0.19	0.19	0.53	0.53	0.25	0.25	56.88	63.44
Dehradun	26.30	28.67	26.30	28.53	0.15	0.19	0.03	0.04	0.00	0.00	26.65	28.91
Hathras	20.39	23.72	20.39	23.63	0.09	0.06	0.25	0.27	0.00	0.00	20.84	24.63
Jalna	28.62	34.83	28.46	34.60	0.03	0.14	0.08	0.09	0.50	0.55	29.47	35.96
Kanchipuram	8.77	9.85	8.77	9.85	0.00	0.00	0.25	0.28	3.65	3.90	13.17	14.55
Kanpur Dehat	12.63	14.65	11.83	13.70	0.07	0.27	0.30	0.33	0.00	0.00	13.26	15.36
Kheda	38.84	40.66	23.34	24.48	0.00	0.05	0.01	0.01	0.25	0.33	39.26	41.18
Kolar	28.62	32.28	28.24	31.87	0.03	0.11	0.10	0.11	0.00	0.00	28.94	32.63
Maharajganj	31.60	34.04	31.60	33.98	0.06	0.09	0.09	0.10	0.00	0.00	31.94	34.32
Mahbubnagar	17.72	19.42	16.83	18.36	0.17	0.31	0.59	0.65	0.00	0.00	18.17	20.38
Mahendragarh	17.03	20.65	12.28	13.84	0.64	0.00	1.80	2.08	2.18	2.40	22.10	25.93
Mandi	11.08	14.73	11.08	14.73	0.00	0.00	4.35	4.49	1.50	1.50	18.90	22.89
Mukhtsar	82.05	84.59	78.70	81.16	0.00	0.00	0.05	0.06	2.85	2.99	84.95	87.64
Nagaon	16.49	21.26	16.49	21.26	0.00	0.00	0.00	0.00	1.38	1.45	17.89	22.74
Nainital	21.32	24.92	18.05	20.93	0.05	0.12	0.10	0.10	0.05	0.05	21.62	25.22
Neemuch	32.54	37.22	28.71	32.94	0.22	0.12	0.04	0.04	0.38	1.20	33.68	39.11
Pathanamthitta	24.27	26.67	21.28	25.45	0.13	0.00	0.33	0.35	0.75	0.98	25.45	31.30
Rajnandgaon	22.30	24.34	22.30	24.34	0.00	0.00	0.32	0.43	0.00	0.00	22.67	24.82
Sahibganj	25.69	27.87	25.28	26.94	0.04	0.06	0.46	0.52	0.00	0.00	26.24	28.93
Samastipur	14.46	15.87	14.21	15.53	0.05	0.14	0.61	0.65	0.23	0.33	15.47	16.94
Satara	9.72	10.93	9.96	10.87	0.29	0.20	0.35	0.39	0.00	0.00	10.14	11.29
Sawai madhopur	32.89	37.48	32.89	37.45	0.03	0.18	0.09	0.09	0.00	0.00	33.33	37.75
Uttara Kannada	24.22	28.89	20.81	25.03	0.05	0.06	0.34	0.47	0.00	0.00	24.71	29.43
Vizianagaram	38.30	39.47	38.30	39.47	0.00	0.00	0.00	0.00	0.00	0.00	39.20	40.37
North Tripura	19.06	21.73	17.99	20.51	0.10	0.17	0.09	0.09	0.01	0.01	19.60	22.19
All Districts	**25.28**	**28.37**	**23.73**	**26.62**	**0.09**	**0.11**	**0.41**	**0.45**	**0.56**	**0.66**	**26.58**	**29.92**

Source: IEG Field survey

Table A20: Non Tangible benefits (Household Beneficiaries)

District	Useful for village community (%)	Drinking water availability (%)	Increase in water table (%)	Enhancement in quality of land (%)
Anantapur	100	95	92.5	100
Bikaner	100	97.5	77.5	100
Birbhum	100	65	80	100
Boudh	100	97.5	65	90
Chattarpur	100	70	45	95
Chhindwara	100	95	87.5	75
Dehradun	100	97.5	82.5	100
Hathras	100	82.5	82.5	95
Jalna	97.5	100	85	100
Kanchipuram	100	100	90	100
Kanpur Dehat	100	65	77.5	92.5
Kheda	97.5	92.5	87.5	60
Kolar	100	90	90	100
Maharajganj	100	97.5	95	97.5
Mahbubnagar	100	95	87.5	97.5
Mahendragarh	100	85	55	97.5
Mandi	100	95	60	100
Mukhtsar	100	85	30	70
Nagaon	100	95	67.5	100
Nainital	100	90	72.5	97.5
Neemuch	100	97.5	95	70
North Tripura	100	97.5	95	87.5
Pathanamthitta	100	95	67.5	100
Rajnandgaon	100	97.5	90	100
Sahibganj	100	100	92.5	87.5
Samastipur	100	30	92.5	97.5
Satara	100	2.5	85	100
Sawai madhopur	97.5	92.5	87.5	100
Uttara Kannada	97.5	70	50	95
Vizianagaram	100	100	87.5	100
All Districts	99.7	85.8	78.4	93.5

Source: IEG Field survey

Table A21: Non Tangible Benefits (Gram Panchayat officials)

Districts	Useful for the village community	Drinking water availability	Improved sanitation and hygiene	Better work and wages opportunities	Increase in Employment opportunities	Reduced the wage disparity	Increase in Ground water table
Anantapur	2.6	1.9	2.6	1.9	2.6	2.6	1.3
Bikaner	3.2	3.2	2.6	3.2	3.2	2.6	1.9
Birbhum	2.6	1.9	2.6	2.6	2.6	2.6	2.6
Boudh	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Chhatarpur	2.6	0.6	1.9	2.6	1.3	2.6	1.9
Chhindwara	5.1	5.1	5.1	5.1	5.1	5.1	5.1
Dehradun	2.6	0.6	2.6	1.9	1.9	1.9	1.9
Hathras	3.2	4.5	3.8	4.5	4.5	3.8	4.5
Jalna	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Kanchipuram	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Kanpur Dehat	2.6	1.9	2.6	2.6	2.6	2.6	1.9
Kheda	3.8	3.2	3.8	4.5	3.8	1.9	4.5
Kolar	2.6	1.9	1.9	1.9	1.9	2.6	2.6
Mahbubnagar	2.6	2.6	2.6	2.6	2.6	2.6	1.9
Maharajganj	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Mahendragarh	3.8	1.3	3.2	2.6	3.2	1.9	2.6
Mandi	2.6	1.3	1.9	2.6	2.6	1.3	1.9
Muktsar	2.6	1.3	2.6	2.6	2.6	1.3	1.9
Nagaon	2.6	2.6	2.6	2.6	2.6	2.6	1.3
Nainital	3.2	2.6	3.8	3.8	3.8	3.8	3.8
Neemach	5.8	4.5	5.8	5.8	5.8	4.5	5.8
North Tripura	2.6	1.9	1.9	2.6	2.6	2.6	2.6
Pathanamthitta	2.6	2.6	1.9	2.6	2.6	2.6	2.6
Rajnandgaon	5.1	5.1	5.1	5.1	5.1	5.1	5.1
Sahebganj	3.2	0.0	0.6	2.6	2.6	2.6	3.2
Samastipur	2.6	0.0	1.9	2.6	2.6	2.6	2.6
Satara	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Sawai Madhopur	1.9	1.9	1.9	2.6	2.6	2.6	1.9
Uttar Kannada	3.2	3.2	3.2	3.2	3.2	3.2	3.2
Vizianagaram	2.6	2.6	2.6	2.6	2.6	1.9	2.6
All District	96.8	77.6	90.4	96.2	95.5	88.5	90.4

Source: IEG Field survey

Table A22: Individual asset demanded and Reasons for demanding Individual asset by the selected Households

District	% of HH demanded for creation of assets(s) on own land under MGNREGA	Reasons for not demanding any asset on own land (%)		% asset been created on own land under MGNREGA
		Don't need any asset on own land	Unaware about individual asset creation	
Anantapur	50.0	12.5	37.5	50.0
Bikaner	95.0	0.0	2.5	90.0
Birbhum	100.0	0.0	0.0	100.0
Boudh	100.0	0.0	0.0	100.0
Chhatarpur	75.0	17.5	0.0	75.0
Chhindwara	100.0	0.0	0.0	100.0
Dehradun	50.0	10.0	37.5	50.0
Hathras	7.5	35.0	37.5	7.5
Jalna	90.0	0.0	10.0	87.5
Kanchipuram	0.0	30.0	70.0	0.0
Kanpur Dehat	0.0	57.5	22.5	0.0
Kheda	27.5	22.5	32.5	22.5
Kolar	87.5	2.5	10.0	82.5
Mahbubnagar	75.0	12.5	12.5	75.0
Maharajganj	22.5	20.0	55.0	22.5
Mahendragarh	0.0	20.0	25.0	0.0
Mandi	100.0	0.0	0.0	100.0
Muktsar	2.5	45.0	50.0	0.0
Nagaon	0.0	42.5	57.5	0.0
Nainital	55.0	25.0	12.5	52.5
Neemach	67.5	7.5	25.0	67.5
North Tripura	75.0	15.0	7.5	75.0
Pathanamthitta	25.0	42.5	32.5	25.0
Rajnandgaon	67.5	20.0	12.5	62.5
Sahebganj	97.5	0.0	0.0	97.5
Samastipur	100.0	0.0	0.0	100.0
Satara	100.0	0.0	0.0	100.0
Sawai Madhopur	100.0	0.0	0.0	100.0
Uttara Kannada	60.0	5.0	35.0	60.0
Vizianagaram	15.0	30.0	55.0	15.0
All Districts	**58.2**	**15.8**	**21.3**	**57.3**

Source: IEG Field survey

Table A23 Different sources of credit of the selected HH before and after the asset creation

District	Before asset creation, sources of credit or borrowed money(%)						After asset creation, sources of credit or borrowed money (%)					
	Banking institution & Cooperatives	Other insti.	SHG	Village Moneylenders	Traders	Relatives	Banking institution & Cooperatives	Other insti.	SHG	Village Money lenders	Traders	Relatives
Anantapur	10	2.5	2.5	35	15	27.5	0	0	0	17.5	15	25
Bikaner	5	0	0	5	17.5	27.5	0	0	0	0	7.5	27.5
Boudh	0	0	2.5	20	17.5	25	0	0	0	0	12.5	30
Chhatarpur	0	0	0	7.5	17.5	30	0	0	0	0	17.5	32.5
Chhindwara	32.5	2.5	2.5	0	7.5	2.5	17.5	12.5	12.5	12.5	12.5	17.5
Dehradun	5	0	0	12.5	2.5	17.5	0	0	0	0	0	12.5
Hathras	15	0	5	10	12.5	35	5	0	5	10	2.5	12.5
Jalna	35	12.5	0	5	15	20	10	5	0	5	5	27.5
Kanchipuram	0	0	0	10	0	12.5	0	0	0	0	0	0
Kanpur Dehat	5	0	0	0	7.5	27.5	0	0	0	0	0	62.8
Kheda	20	0	0	2.5	20	35	10	0	0	0	5	40
Kolar	17.5	0	0	27.5	17.5	30	0	0	0	5	7.5	22.5
Mahbubnagar	7.5	0	10	17.5	17.5	37.5	2.5	0	0	15	12.5	27.5
Maharajganj	7.5	0	0	10	17.5	25	0	0	0	7.5	2.5	22.5
Mahendragarh	20	0	0	15	7.5	10	0	0	0	2.5	15	15
Mandi	0	7.5	0	5	7.5	12.5	0	0	0	0	0	17.5
Muktsar	0	0	0	17.5	15	42.5	0	0	0	1.3	12.8	14.1
Nagaon	20	0	0	5	5	7.5	0	0	0	10	5	12.8
Nainital	30	0	2.5	12.5	15	25	0	0	0	2.5	0	7.5
Neemach	5	0	0	7.5	32.5	30	5	0	0	0	7.5	20
North Tripura	9.9	0		2.5	0	0	2.5	0	0	2.5	2.5	35
Pathanamthitta	0	0	15	27.5	27.5	42.5	0	0	0	7.5	15	47.5
Rajnandgaon	10	0	0	12.5	5	22.5	5	0	0	5	5	25
Sahebganj	5	0	0	2.5	2.5	27.5	0	0	0	5	5	5
Samastipur	2.5	0	0	2.5	7.5	30	0	0	0	0	5	2.6
Satara	17.5	0	0	2.5	0	0	0	0	0	0	0	0
Sawai Madhopur	2.5	0	0	5	2.5	32.5	0	2.5	0	0	5	17.5
Uttara Kannada	2.5	37.5	0	37.5	0	20	0	0	0	2.5	0	2.5
Vizianagaram	12.5	0	2.5	25	7.5	27.5	2.5	0	0	2.5	2.5	10
All District	**12.93**	**12.5**	**5.31**	**12.68**	**12.39**	**25.27**	**6.66**	**6.66**	**8.75**	**6.69**	**8.19**	**21.93**

Source: IEG Field survey