

**IMPACT ASSESSMENT OF PRADHAN  
MANTRI GRAM SADAK YOJANA (PMGSY)  
TAMIL NADU**

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**Centre for Rural Management (CRM)  
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# IMPACT ASSESSMENT OF PRADHAN MANTRI GRAM SADAK YOJANA (PMGSY) TAMIL NADU

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## **PREFACE**

*Centre for Rural Management (CRM), Kottayam, Kerala has been assigned to conduct Impact Assessment of Predhan Mantri Gram Sadak Yojana (PMGSY) for the State of Tamil Nadu by the Ministry of Rural Development, Government of India, New Delh. CRM has constituted a team for this assignment under the leadership of Dr. Jos Chathukulam, the Director. The members of the team consist of Mr.C.V.Balamurali, Mr. Anish Mathew, Mr. T.V.Thilakan Ms. Shamla Beevi, Ms.Rekha. V, Ms. Divya. T, Ms.Siji.K V, Ms. Shylaja perl, Mr.Riyas P.K, Ms. Sajeena Nizar,, Ms. Renjini Chellappan and Ms.Pretheesh S .*

*During the field visits in the State, interactions are made with people's representatives, officials, senior citizens, local community leaders and women SHG leaders. During the focus group discussions (FGDs) and participatory rural appraisal (PRA), the team has received excellent support from different stakeholders of PMGSY in the State of Tamil Nadu.*

*We are extremely thankful to the District Administration, District Panchayat, and District Rural Development Agency (DRDA) and all the Gram Panchayats functionaries of both sample and control habitations in the Districts of Salem, Tirunelveli and Tiruvannamalai for extending all possible help in carrying out this assignment and their wholehearted support during the field visits. We are also grateful to the local community for providing their valuable responses and suggestions.*

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*December 2011.*

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# **IMPACT ASSESSMENT OF PRADHAN MANTRI GRAM SADAK YOJANA (PMGSY)- Tamil Nadu**

## **Executive Summary**

### **Introduction**

Lack of access of good roads net works is a major constraint on the incomes and welfare of the poor. It is also found that areas with poor access to main roads had lower levels of consumption expenditure per person and high levels of poverty incidence. Roads are essential for economic progress of villages. Pradhan Mantri Gram Sadak Yojana (PMGSY), a centrally sponsored scheme seeks to provide villages with 'all weather roads' and connectivity with outside world. Eliminating the isolation of populated areas with limited accessibility can provide the population greater access to critical goods as well as essential social services.

PMGSY was launched on 25<sup>th</sup> December, 2000. It's primarily aim is to provide all weather road connectivity to over 1.60 lakh eligible unconnected habitations. The works are executed by the State Governments and monitored by the Ministry of Rural Development through the National Rural Roads Development Agency. *(Refer Chapter 1: Introduction)*

### **Objective of the Study**

Objectives of the Impact Assessment Study are to assess the impact of PMGSY roads on the local areas and on economic factors in general and in particular on:

1. Agricultural growth particularly in increasing market access for agricultural produce;
2. Direct and indirect employment and income in the short run as well as in the long run;
3. Access to healthcare, education and other facilities and the resultant outcomes;
4. Gender empowerment and lifting up of socially and economically disadvantaged sections of the population; and
5. Poverty reduction.

## **Methodology**

In Tamilnadu, three districts are selected for impact assessment of PMGSY. They are Salem, Tirunelveli and Tiruvannamalai. There are five control habitations in each district and 25 households are covered from each of these control habitations. From each district 15 sample habitations are taken and from each sample habitations, 25 households are also covered. A total of 1125 households from sample habitations and 374 households from control habitations are covered. (Refer Table 2.1.) Four types of schedules are applied and they are (1) Sample habitation level schedule (2) Control habitation schedule (3) Sample household schedule and (4) Control household schedule. 'Before and After' & 'With and Without' (Sample & Control groups) approaches commonly used in impact assessment studies have been applied. There has been a specific reference period for the study. The average of three years before the actual year since when the PMGSY road was operative and the period till the current year from the year of operation was taken for the purpose of comparison of before and after the PMGSY road was operative. (Refer Chapter 2: Impact Assessment of PMGSY)

## **Profile of Habitations and Households Covered**

The sample households have adequate representation of schedule castes, schedule tribes and households living below poverty line. After the laying of the PMGSY roads, all weather connectivity has improved and no village remains closed to traffic for even a single day. A total of 1125 households from 45 sample habitations are covered under the study. Basic information on profile of the household was collected at the time of the household survey. (Refer Chapter 3: Profile of Habitations & Households Covered)

- Out of the 45 habitations covered under the study 30 habitations were connected by new constructions and 15 habitations were connected by upgraded roads.
- More than two third of the habitations (62.20 %) have less than 35 percent of SC/ST households, 28.89 percent of the habitations have

more than 50 percent of SC/ST households and 8.89 percent of habitations have 35-50 percent of SC/ST households.

- Out of the 1125 households covered, 77.42 percent are BPL families and 22.58 percent are APL families.
- The percentage of SC households is 17.16, the percentage of ST households is 18.49 and the percentage of other households is 64.36 percentages.
- 13.42 percent of the households surveyed have pucca houses, 55.91 percent have semi pucca houses, 29.07 percent have kutcha houses and 1.60 percent does not have a house.
- 89.78 percent of houses have less than or equal to five members and the remaining 10.22 percent of houses have six to ten members.
- The gender ratio is 924.

#### **Connectivity Provided by PMGSY**

After the laying of the PMGSY roads, all weather connectivity has improved and no village remains closed to traffic for even a single day. *(Refer Chapter 4: Connectivity Provided by PMGSY)*

- Before the implementation of PMGSY 28.89 percent of sample habitations covered in Tamilnadu had all weather pucca roads, 6.67 percent have gravel/water bound macadam layer road, 42.22 percent have earth work (motorable) road and 22.22 percent have earth work (not motorable) road.
- Out of the 45 habitations covered, the percentage of habitations enjoying all weather road connectivity rose from 28.89 percent to cent percent after the implementation of PMGSY.
- Improvements happened in the public transport facilities due to the PMGSY roads. In 28.89 percent of habitations the number of buses plying in and out of habitations has increased from none to one, in 35.56 percent of habitations the number of auto rickshaws plying has increased from none to one and in 33.33 percent of habitations the number of jeep/car plying in and out of habitations has increased from none to one.

### **Impact on Agriculture**

With regard to agriculture, the area under vegetables & fruits has risen and area under cereals crops has decreased. Pulses were not cultivated at any significant level in the three districts. Fertilizer consumption and the use of high yielding varieties have increased. As a result, output of cereals, fruits and vegetables has increased. Marketable surplus of agricultural produce especially cereals and fruits with farmers has increased and so also the profits for farmers. *(Refer Chapter 5: Impact on Agriculture)*

- Improved connectivity can change the cropping patterns. The percentage of change in cropped area after PMGSY for cereals is -2.27, for pulses is -9.68 and for vegetables and fruits is 2.17.
- In the case of cereals 3.02 percent of households reported increase in use of fertilizers and 3.11 percent of households reported increase in use of improved seeds, 13.87 percent of households reported increase in production. In the case of vegetables increase in fertilizer usage is reported by 1.78 percent of households, increase in planting high yielding seeds is reported by 1.60 percent of households and increase in production is reported by 5.87 percent of households.
- Increase in the quantity sold is reported by 42.15 percent of households growing cereals, 33.33 percent of households growing pulses and 36 percent of households growing vegetables. Increase in average realized price is reported by 20.92 percent of households for cereals and 34.50 percent of households for vegetables
- Households reported increase in the number of assets is 41.18 percent for tractor, 11.90 percent for water lifting pump set and 635.71 percent for other farm machinery.

### **Impact on Employment Generation**

On employment front, there has been increase in employment opportunities mostly in main occupations and marginally in their subsidiary occupations. There has been increase in the number days of work available in a year. Most of the people do no change their type of work. The PMGSY roads have



reduced travel distance and travel time to reach their places of work. *(Refer Chapter 6: Impact on Employment Generation)*

- 23.47 percent of the households reported improved employment opportunities in their main occupations.
- Households reported increase in total days of employment is 23.64 percent. Out of that 17.33 percent of households reported increase in the number of days of employment up to 50 days, 3.64 percent of households reported 51-100 days, 1.33 percent of households reported 101-150 days, 0.71 percent of households reported 151-200 days and 0.44 percent of households reported above 200 days.
- 1.87 percent of households shifted place of employment.
- After PMGSY road become operative 5.51 percent of households change their occupations.

### **Impact on Income and Poverty Alleviation**

PMGSY roads helped to improve income and to alleviate poverty. Income levels and socio-economic characteristics of majority of the households have improved after PMGSY road become operative. After PMGSY road become operative households have better dwelling unit, access to better sanitation facilities, and increase in ownership of consumer durables. New enterprise/industry is set up and PMGSY road encouraged people in to migrate to other places in search of better employment opportunities. *(Refer Chapter 7: Impact on Income & Poverty Alleviation)*

- Number of sample households engaged in agricultural activities is 331 and after laying PMGSY road 26.68 percent of the households reported increase in income from agricultural activities.
- Increase in average annual income due to principal occupation is reported by 41.42 percent of households.
- Increase in total average annual income in all occupations is reported by 41.78 percent of households.
- Income level of the people is increased in 88.89 percent of habitations after PMGSY road become operative.

- Out of the 1125 households surveyed in Taminadu, 871 are BPL households. BPL households reported improvement in their economic status is 82.78 percent.
- 14.93 percent of households have better dwelling unit, 15.73 percent of households have access to better sanitation facilities, 48.18 percent of households reported increase in ownership of consumer durables and 4.53 percent of households reported reduction in the migration.
- New enterprise/industry is set up in 20 percent of the habitations.
- PMGSY road encouraged people in 51.11 percent of the habitations to migrate to other places in search of better employment opportunities.

### **Impact on Health**

All weather pucca roads are available to health institutions in most of the habitations. Reduction in travel time to reach the nearest health facility is reported in the case of maternity emergencies and serious injuries or accidents. Availability of govt. doctors and private doctors are increased after PMGSY road. After the opening of the roads, child births more often take place in institutions like local hospitals where expectant mothers receive professional care. Immunizing the children against common childhood diseases have become universal in villages. *(Refer Chapter 8: Impact on Health)*

- All weather pucca roads are available to Public Health Centre (PHC) in 68.89 percent of habitations, to govt. hospital in 77.78 percent of habitations and to private hospital/nursing home in 71.11 percent of habitations.
- In the case of maternity emergencies there is reduction in travel time to reach the nearest health facility in 46.67 percent of habitations.
- In the case of serious physical injuries or accidents there is reduction in travel time to reach the nearest health facility in 48.89 percent of habitations.

- In the case of other medical emergencies reduction in travel time to reach the nearest health facility is reported in 48.89 percent of habitations.
- 95.24 percent of the women have received pre-natal care before PMGSY road and 93.94 percent after PMGSY road.
- 20.63 percent of the child birth took place in home before PMGSY road and after PMGSY road it is reduced to 8.08 percent.

### **Impact on Education**

Schools and teachers have multiplied. Habitations with schooling facilities for children have become the norm. After PMGSY road children can go to distant educational institutions for better educational facilities. The PMGSY roads have brought down the distance and time to reach a school for children who wish to study. The PMGSY roads have boosted school enrolment in general and enrolment of girl students in particular. Literacy among people has increased by leaps and bounds. *(Refer Chapter 9: Impact on Education)*

- It is reported that 15.56 percent of the habitations reported increase in number of anganwadi centers.
- More than 6.60 percent of habitations reported increase in number of schools.
- There is sufficient number of teachers in the schools (13.33 percent of habitations).
- A few habitations (2.22 percent) reported regular provision of mid-day meals for the students.
- Enrollment in primary school after PMGSY road is increased from 90.57 to 97.89 percent for boys and 87.85 to 96.34 percent to girls.
- In 95.56 percent of habitations there is an increase in number of children going to school, increase in number of girls going to school and improvement in attendance of students in the nearby schools during all seasons.

**Impact on Other Aspects**

House building sector is blooming. There is growing interest in building sanitary toilets. The roads have made it easy to go to Gram Panchayat office, Block office, police stations or any one of the administrative offices. The roads have strengthened Public Distribution system. Food grains, sugar, kerosene and other ration goods have come within the reach of common people. Rural electrification has increased. Power consumption in households, agriculture and industrial or commercial enterprises has grown. Habitations with well lit streets have become usual. *(Refer Chapter 10: Impact on Other Aspects)*

- Families constructed pucca houses in 86.67 percent of habitations.
- In 77.78 percent of habitations more families constructed sanitary latrines.
- Better connectivity is reported by 75.56 percent of habitations to gram panchayat, 77.78 percent of habitations to block panchayat, district head quarters and to local police station.
- 4.44 percent of habitations reported increases in number of ration shops and 2.22 percent of habitations reported increase in the accessing of ration shops outside the habitation.
- Increase in the number of electricity connection is reported by 93.33 percent of habitations for household purpose, 73.33 percent of habitations for agricultural purposes, 15.56 percent of habitations for industrial/ commercial purposes and 88.89 percent of habitations for street lights.

**Summing up**

PMGSY has ushered in all round development in rural areas of Tamil Nadu.

# **Chapter 1**

## **Introduction**

### **1.1. Rural roads and Development**

No village is an island. About three fourths of India's one billion people live in villages, which are frequently characterized by low level of public infrastructure, especially roads. While some villages are connected by roads others are served by footpaths or cart tracks only. Roads are indispensable for economic progress of the villages. Lack of access of good roads net works is a major constraint on the incomes and welfare of the poor, though quantifying the precise impact of this constraint is challenging. It is a disturbing fact that this infrastructure is inadequate and in deplorable condition. It is also found that areas with poor access to main roads had lower levels of consumption expenditure per person and high levels of poverty incidence. The existing road network has many gaps. These gaps need to be plugged in. As road construction and improvement is generally not a form of investment that rural people can make by themselves, public sector involvement is required. In this context, a large scale public sector investment is required for road net work to enhance rural areas and it has high relevance in the political economy of the country.

### **1.2. The Pradhan Mantri Gram Sadak Yojana (PMGSY)**

Aware of the situation, the Government of India has chalked out an ambitious programme on 25<sup>th</sup> December, 2000 and has now been under implementation for over ten years to enhance rural connectivity. It is christened as Pradhan Mantri Gram Sadak Yojana (PMGSY). The primary objective of the PMGSY is to provide connectivity, by way of an 'All Weather Road' with necessary culverts and cross drainage structures which is operable throughout the year to the habitations which remain unconnected by any road. It is estimated that there are 1.60 lakh eligible unconnected habitations in India.

The unit for the programme is a habitation<sup>1</sup> and not a revenue village. A survey has revealed that about 40 percent of the habitations in the country are not yet connected by all weather roads<sup>2</sup>. There are fair weather roads<sup>3</sup> too. They are fordable during the dry season only. The PMGSY has two components. One is termed as 'new connectivity' which involves construction of road from the earth work stage to the prescribed specifications. The other component 'upgradation' involves conversion from gravel or water bound Macadam stage to the desired specification or widening of the road. The rural roads constructed under PMGSY must meet the technical specifications and geometric design standards given in the Rural Roads Manual of the IRC.

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<sup>1</sup>A habitation is a cluster of population, living in an area, the location of which does not change over time. .

<sup>2</sup>. All weather road is one negotiable during all weathers

<sup>3</sup>. They are fordable only during the dry season

## **Chapter 2**

### **Methodology**

#### **2.1. Objectives of the Study**

The broad objectives of the study is to assess the overall socio-economic impact on the lives of the rural population as a result of enhanced rural connectivity provided through the PMGSY and the improvements or the changes brought about by the PMGSY roads in the lives of the rural poor. In other words, the objectives of the Impact Assessment Study are to assess the impact of PMGSY roads on the local areas and on economic factors in general and in particular on:

1. Agricultural growth particularly in increasing market access for agricultural produce;
2. Direct and indirect employment and income in the short run as well as in the long run;
3. Access to healthcare, education and other facilities and the resultant outcomes;
4. Gender empowerment and lifting up of socially and economically disadvantaged sections of the population; and
5. Poverty reduction.

#### **2.2. Methodology, Sampling and Scope of the Study**

As per the methodology in each state around 10 percent of the districts are identified through geographically stratified random sampling. In Tamil Nadu, three districts are selected for impact assessment of PMGSY. They are Salem, Thirunelveli and Thiruvannamalai. From each district 10 habitations provide connectivity through newly laid PMGSY roads and 5 habitations provide connectivity through upgraded pre existing roads. In all, 15 habitations are taken up for study in either district.

In order to serve as a bench mark 5 habitations from each district are selected as control sample. The five habitations are not yet connected by PMGSY road. Care is taken that these habitations are of similar size

(population) as those in the experimental group and at least 5 Kms away from any PMGSY road.

**Table 2.1. Sample Covered under the Study**

Sl.No.	District	Habitations Covered	Households Covered	Control Habitations Covered	Control Households Covered
1	Salem	15	375	5	125
2	Tirunelveli	15	375	5	124
3	Tiruvannamalai	15	375	5	125
<b>Tamilnadu</b>		<b>45</b>	<b>1125</b>	<b>15</b>	<b>374</b>

Source : Field Survey

### **2.3. Survey Parameters and Approach**

From every habitation 25 households are selected for canvassing household schedules. This makes it 375 households for each district in the experimental group. The control group has 125 households in each district. Altogether 1125 households in experimental groups (sample habitation) and 374 households in control groups (control habitation) have been covered. Refer Table 2.1 (One house hold in control group is missing). ‘Before and After’ & ‘With and Without’ (Sample & Control groups) approaches commonly used in impact assessment studies have been applied.

### **2.4. Reference Period**

The following criteria have been designed for the reference period under the impact assessment by the Ministry of Rural Development and the Nodal Agency (CMI Social Research Centre) and it was applied any change. “The averages of 3 years before the actual year when the PMGSY road was operative and the period till the current year from the year of operation was taken for the purpose of comparison of before and after the PMGSY road was operative. In case of roads completed recently (less than 3 years), the averages of whatever period since completed till date was taken.”

“In case of the 5 Control habitations in a district, the reference year taken was the year having the maximum number of roads completed in the 15 sample roads of the same districts. The averages of 3 years pre and post



that year where the questions pertain to the comparison of previous and current status were taken. In case of reference year was recent (less than 3 years), the average of whatever period since then till date was taken.” Refer *All India report on “Impact Assessment of Pradhan Mantri Gram Sadak Yojana” (PMGSY), E&M Wing, Ministry of Rural Development, Govt. of India, New Delhi, 2011.*

## **2.5. Coverage under the Study**

Care is taken to cover adequate number of landless households, marginal and small farmers, medium and big farmers, schedule castes and schedule tribes. Four types of schedules are applied and they are (1) sample habitation level schedule (2) Control habitation schedule (3) Sample household schedule and (4) Control household schedule.

## Chapter 3

### Profile of Habitations and Households Covered

#### 3.1. Profile of Habitations Covered Under the Study

This part gives an idea about the population size, social groups and economic status of habitations.

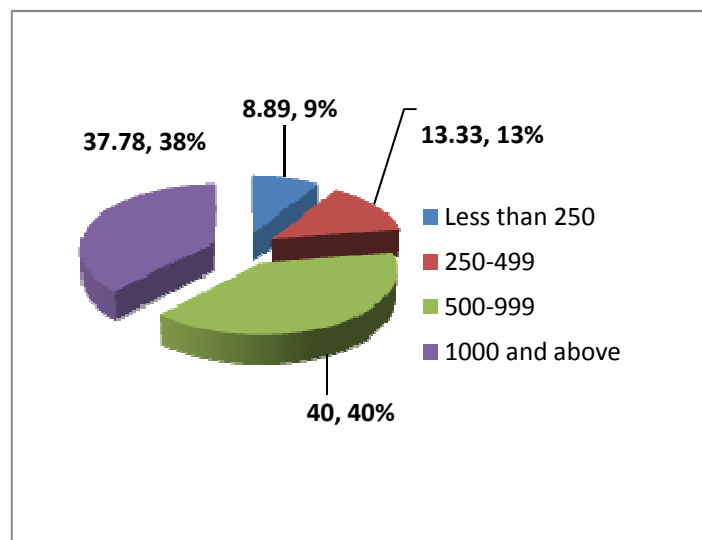
##### 3.1.1. Population Size of Habitations

Out of the 45 habitations covered in Tamil Nadu state, 40 percent of the habitations have a population size of 500-999, 37.78 percent of the habitations have a population size of 1000 and above, 13.33 percent of the habitations have a population size of 250-499 and 8.89 percent of the habitations have a population size of less than 250. In Tamil Nadu most of the habitations under PMGSY are large size habitations. Therefore the scheme is benefited by maximum number of population. This aspect is more visible in Tiruvannamalai district. *District wise demographic socio and economic profile of the habitations covered under the status is provided in table 3.1*

The district wise analysis shows that in Salem district out of the total surveyed habitations, 40 percent of the habitations have a population size of 500-999, 26.67 percent of the habitations have a population size of less than 250, 20 percent of the habitations have a population size of 1000 and above and 13.33 percent of the habitations have a population size of 250-499. In Tirunelveli district out of the total surveyed habitations, population size of 500-999 and population size of 1000 and above have equal percent (40 %) of the habitations. The remaining 20 percent of the habitations have a population size of 250-499. In Tiruvannamalai district more than half (53.33%) of the habitations surveyed have a population size of 1000 and above, 40 percent of the habitations have a population size of 500-999 and only 6.67 percent of the habitations have a population size of 250-499. *The*

distribution of habitations covered under the study as per population size is given in figure 3.1.

**Figure 3.1: Population Size of Habitations Covered (% of Habitations)**



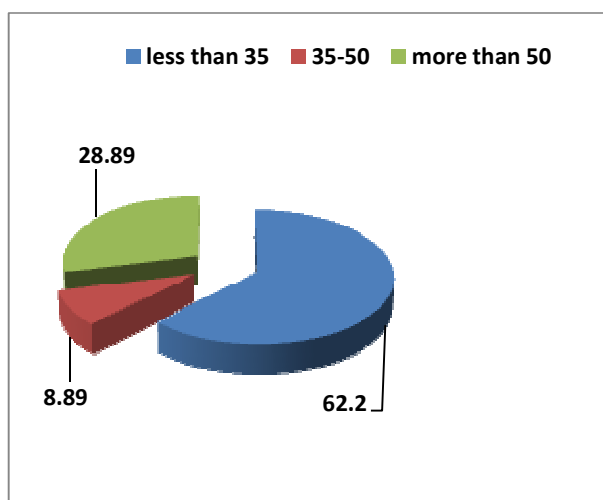
Source: Figure generated from Table 3.1

### 3.1.2. Social Groups of Habitations

In Tamil Nadu state out of the total surveyed habitations, more than three fifth of the habitations (62.2%) have less than 35 percent of SC/ST households, 28.89 percent of the habitations have more than 50 percent of SC/ST households and 8.89 percent of habitations have 35-50 percent of SC/ST households. *The distribution of habitations under social groups is given in figure 3.2.* In Salem district equal percent of the habitations surveyed (46.67 %) have more than 50 percent of the SC/ST households and less than 35 percent of the SC/ST households, 6.67 percent of the habitations have 35-50 percent of the SC/ST households. In Tirunelveli district four fifth percent of the habitations surveyed (80%) have less than 35 percent of SC/ST households, 13.33 percent have more than 50 percent of SC/ST households and only 6.67 percent have 35-50 percent SC/ST households. In Tiruvannamalai district more than half (60%) of the habitations surveyed have less than 35 percent of SC/ST households, 26.67 percent of the habitations have more than 50 percent of SC/ST households and only 13.3 percent of the habitations have 35-50 percent of SC/ST

households. No doubt, considerable size of SC/ST household in three districts of Tamil Nadu have benefited under the PMGSY, though rate of benefit varies from district to district.

**Figure 3.2: Distribution of Sample Habitations as per Percentage of SC/ST Households**



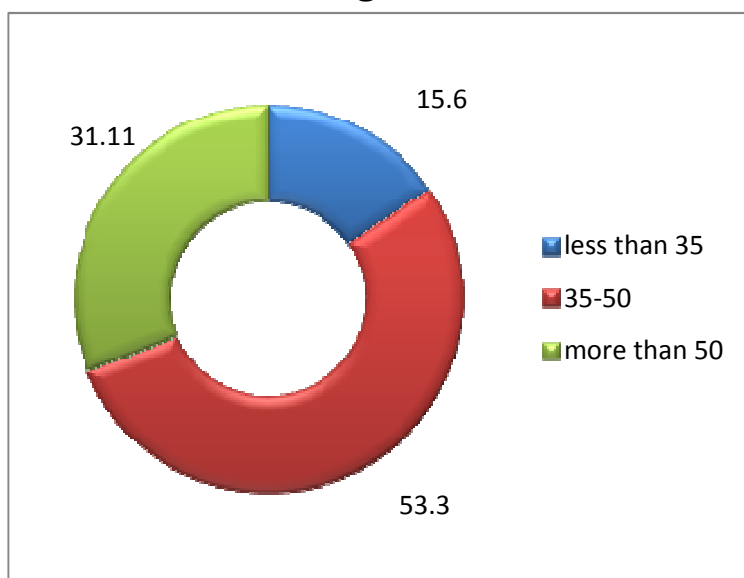
Source: Figure generated from Table 3.1

### 3.1.3. Economic Status of Habitations

In Tamil Nadu state out of the total surveyed habitations, more than half of the habitations (53.3%) have 35-50 percent of BPL households, 31.11 percent of the habitations have more than 50 percent of BPL households and 15.6 percent of habitations have less than 35 percent of BPL households. *Economic status of habitations is given in figure 3.3.* In Salem district 46.67 percent of the habitations covered have more than 50 percent of the BPL households. But this proportion is less in the case of Tirunelveli (26.67 %) and Thiruvannamalai (20 %) districts. In Salem district 40 percent of the habitations covered have 35-50 percent of BPL households and 13.33 percent of the habitations have less than 35 percent of BPL households. In Tirunelveli district more than half (53.33%) of the habitations covered have 35-50 percent of BPL households and 20 percent of the habitations have less than 35 percent of BPL households. In Thiruvannamalai district more three fifth (66.67%) of the habitations covered have 35-50 percent of BPL

households and 13.33 percent of the habitations have less than 35 percent of BPL households. In Tamil Nadu considerable number of habitations with sizeable BPL households have given special affecting under PMGSY and any the districts Salem has more number of habitation with maximum number of BPL households.

**Figure 3.3: Distribution of Sample Habitations as per Percentage of BPL Households**



Source: Figure generated from Table 3.1

**Table 3.1. Profile of Sample Habitations covered under the study**

*(% of habitations)*

S. No.	District	No. of Districts Covered	Habitations Covered	Population size (persons)				% of SC/ST households			% of BPL households		
				Less than 250	250-499	500-999	1000 and above	less than 35	35-50	more than 50	less than 35	35-50	more than 50
1	Salem	1	15	26.67	13.33	40	20	46.67	6.67	46.67	13.33	40	46.67
2	Tirunelveli	1	15	0	20	40	40	80	6.67	13.33	20	53.33	26.67
3	Tiruvannamalai	1	15	0	6.67	40	53.33	60	13.3	26.67	13.33	66.67	20
<b>Tamilnadu</b>		<b>3</b>	<b>45</b>	<b>8.89</b>	<b>13.33</b>	<b>40</b>	<b>37.78</b>	<b>62.2</b>	<b>8.89</b>	<b>28.89</b>	<b>15.6</b>	<b>53.3</b>	<b>31.11</b>

Source: Field Survey

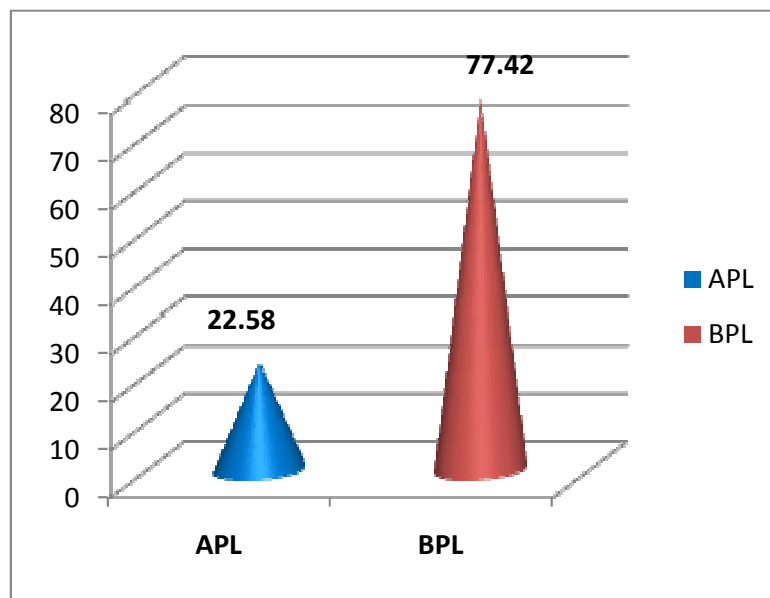
### 3.2. Profile of Households Covered Under the Study

This part gives an idea about the BPL status, caste, ownership of house, size of household and gender ratio of the households in sample habitations. *District wise number of households survey economic status nature of house, size of household and gender of households in sample habitation as given in table 3.2+*

#### 3.2.1. BPL and APL Households

In Tamil Nadu state out of the 1125 households covered, 77.42 percent are BPL families and 22.58 percent are APL families. Out of the 375 households surveyed in each district Salem district have highest BPL families (87.2 %) followed by Tirunelveli district (78.4%) and then Tiruvannamalai district (66.67 %). *The distribution of sample households as per their poverty status is given in figure 3.4.*

**Figure 3.4: Distribution of Sample Households as per their Poverty Status**



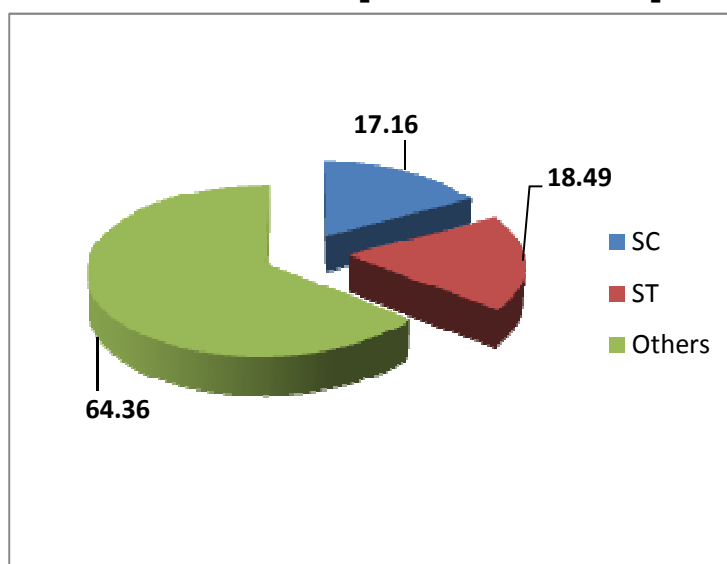
Source: Figure generated from Table 3.2

#### 3.2.2. Social Groups of the Households

Out of the surveyed households in Tamil Nadu state, the percentage of SC households is 17.16, the percentage of ST households is 18.49 and the percentage of other households is 64.36. The percentage of SC households is

highest in Tiruvannamalai district and it is 32 percent, followed by Salem district (10.13 %) and Tirunelveli district (9.33). Out of the three districts surveyed the number of ST families is more in Salem district (47.2 %) followed by Tiruvannamalai district (7.2 %) and least in Tirunelveli district (1.07%). Number of other households is more in Tirunelveli district (89.6%), followed by Thiruvannamalai district (60.8 %) and Salem district (42.67 %). *The distribution of sample households as per social groups is provided in figure 3.5.*

**Figure 3.5: Distribution of Sample Households as per Social Groups**



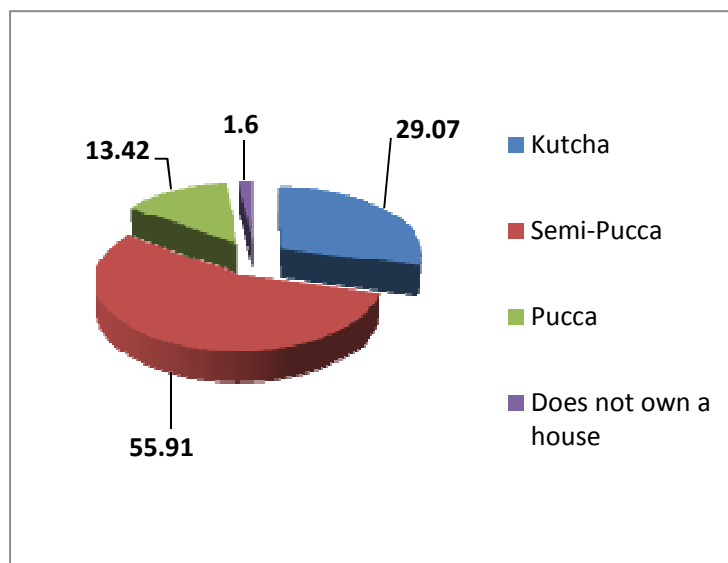
Source: Figure generated from Table 3.1

### 3.2.3. Housing

In Tamil Nadu 13.42 percent of the households surveyed have pucca houses, 55.91 percent have semi pucca houses, 29.07 percent have kutcha houses and 1.6 percent does not have a house. In Salem district 10.67 percent have pucca houses, 47.73 percent have semi pucca houses, 40 percent have kutcha houses and 1.6 percent does not have own houses. In Tirunelveli district 14.13 percent have pucca houses, 61.87 percent have semi pucca houses, 21.6 percent have kutcha houses and 2.4 percent does not have own houses. In Tiruvannamalai district 15.47 percent have pucca houses, 58.13 percent have semi pucca houses, 25.6 percent have kutcha

houses and 0.8 percent does not have own houses. *The distribution of sample households as per the type of house is given in figure 3.6.*

**Figure 3.6: Distribution of Sample Households as per Type of House**



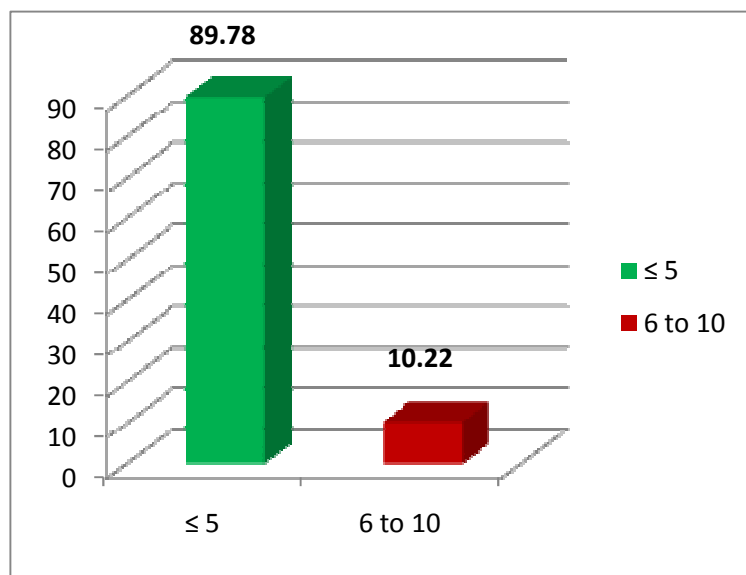
Source: Figure generated from Table 3.2

#### **3.2.4. Size of Households**

Out of the 1125 households covered in Tamil Nadu state, 89.78 percent of houses have less than or equal to five members and the remaining 10.22 percent of houses have six to ten members. In Salem district 90.13 percent of the houses have less than or equal to five members and the remaining 9.87 percent of houses have six to ten members. In Tirunelveli district 86.4 percent of the houses have less than or equal to five members and 13.6 percent of houses have six to ten members. In Tiruvannamalai district 92.8 percent of the houses have less than or equal to five members and the remaining 7.2 percent of houses have six to ten members. *The distribution of sample households as per size is given in figure 3.7.*



**Figure 3.7: Distribution of Sample Households as per Size of Household**



Source: Figure generated from Table 3.2

### 3.2.5. Gender Ratio

In Tamil Nadu the number of women for every 1000 men is 924 for the households surveyed. Out of the three districts covered the sex ratio is more in Tirunelveli district and it is 950 followed by Tiruvannamalai district where the sex ratio is 915 and for Salem district it is 906.

**Table 3.2. Profile of households covered under the study**

District	No. of house holds covered	BPL Status		Caste			Nature of house				Size of households (no. of members)		Gender Ratio (female per 1000 male)
		APL	BPL	SC	ST	Others	Kutcha	Semi-Pucca	Pucca	Does not own a house	≤ 5	6 to 10	
Salem	375	12.8	87.2	10.13	47.2	42.67	40	47.73	10.67	1.6	90.13	9.87	906
Tirunelveli	375	21.6	78.4	9.33	1.07	89.6	21.6	61.87	14.13	2.4	86.4	13.6	950
Tiruvannamalai	375	33.33	66.67	32	7.2	60.8	25.6	58.13	15.47	0.8	92.8	7.2	915
<b>Tamilnadu</b>	<b>1125</b>	<b>22.58</b>	<b>77.42</b>	<b>17.16</b>	<b>18.49</b>	<b>64.36</b>	<b>29.07</b>	<b>55.91</b>	<b>13.42</b>	<b>1.6</b>	<b>89.78</b>	<b>10.22</b>	<b>924</b>

Source : Field Survey

### 3.2.6. Agricultural Land Details of Households

In Tamil Nadu 63.02 percent of the surveyed households does not have agricultural land. In Salem district 42.93 percent of the household surveyed have own agricultural land. Out of that 35.4 percent have less than one hectares of land, 54.04 percent have 1-2 hectares of land and 10.56 percent have more than two hectares of land. The percentage of households having more than half of their agricultural land irrigated is 60.87. In Tirunelveli district 38.67 percent of the household surveyed have own agricultural land. Out of that 35.17 percent have less than one hectares of land, 39.31 percent have 1-2 hectares of land and 25.52 percent have more than two hectares of land. The percentage of households having more than half of their agricultural land irrigated is 70.34. In Tiruvannamalai district only 29.33 percent of the household surveyed have own agricultural land. Out of that 32.73 percent have less than one hectares of land, 55.45 percent have 1-2 hectares of land and 11.82 percent have more than two hectares of land. The percentage of households having more than half of their agricultural land irrigated is 72.73. *Agriculture land details of households is given Table 3.3*

**Table 3.3. Profile of Agricultural Land owning households**

S. No.	District	No. of households covered	Owning Land		If "Yes", size of land holding			(% of households) % irrigated area	
			Yes	No	Less than 1 ha	1-2 ha	More than 2 ha	Less than 50	50 & More
1	Salem	375	42.93	57.07	35.4	54.04	10.56	39.13	60.87
2	Tirunelveli	375	38.67	61.33	35.17	39.31	25.52	29.66	70.34
3	Tiruvannamalai	375	29.33	70.67	32.73	55.45	11.82	27.27	72.73
<b>Tamilnadu</b>		<b>1125</b>	<b>36.98</b>	<b>63.02</b>	<b>34.62</b>	<b>49.28</b>	<b>16.11</b>	<b>32.69</b>	<b>67.31</b>

Source : Field Survey

### 3.3. Profile of Control Habitations and Households Covered

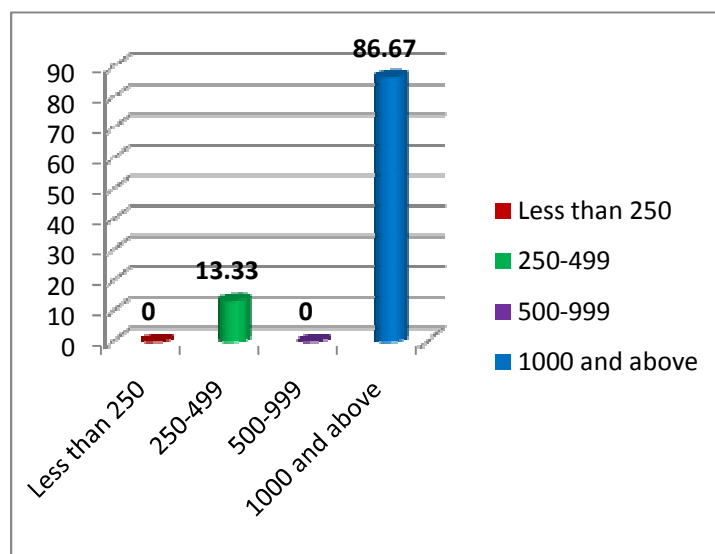
This part describes the population size, social groups and economic status of control habitations. It also gives an idea about BPL status, caste, ownership of house, size of household and gender ratio of the control households

### **3.3.1. Profile of Control Habitations**

Out of the 15 control habitations covered in Tamil Nadu 86.67 percent of habitations have 1000 and above inhabitants and 13.33 percent of habitations have 250-499 inhabitants. It is noticed that 73.33 percent of the habitations have less than 35 percent of SC/ST households, 13.33 percent of the habitations have less 35-50 percent of SC/ST households and 13.33 percent of the habitations have more than 50 percent of SC/ST households. In the surveyed control habitations 66.67 of the households live below poverty line and in the remaining 33.33 percent of habitations 35-50 percent of the households live below poverty line. *Population details for control habitations is given Table 3.4*

In Tirunelveli and Tiruvannamalai districts all the control habitations covered have 1000 and above inhabitants and in Salem district it is only 60 percent. All the control habitations in Tirunelveli district have less than 35 percent of SC/ST households. In Salem district 40 percent of the control habitations have more than 50 percent of SC/ST households, 40 percent have less than 35 percent of SC/ST households and 20 percent have 35-50 percent of SC/ST households. In Tiruvannamalai district 80 percent of the control habitations have less than 35 percent of SC/ST households and 20 percent have 35-50 percent of SC/ST households. All the control habitations covered in Salem district have more than 50 percent of BPL families. It is identified that 40 percent of habitations for Tirunelveli and 60 percent of habitations for Tiruvannamalai have more than 50 percent of BPL families. *The distribution of population size of control habitations is given in figure 3.8.*

**Figure 3.8: Population Size of Control Habitations (% of Habitations)**



Source: Figure generated from Table 3.4

**Table 3.4. Profile of Control Habitations covered under the study**

District	No. of Districts Covered	Habitations Covered	Population size (persons)				% of SC/ST households			% of BPL households		
			Less than 250	250-499	500-999	1000 and above	less than 35	35-50	more than 50	less than 35	35-50	more than 50
Salem	1	5	0	40	0	60	40	20	40	0	0	100
Tirunelveli	1	5	0	0	0	100	100	0	0	0	60	40
Tiruvannamalai	1	5	0	0	0	100	80	20	0	0	40	60
<b>Tamilnadu</b>	<b>3</b>	<b>15</b>	<b>0</b>	<b>13.33</b>	<b>0</b>	<b>86.67</b>	<b>73.33</b>	<b>13.33</b>	<b>13.33</b>	<b>0</b>	<b>33.33</b>	<b>66.67</b>

Source : Field Survey

### 3.3.2. Profile of Control Households

A total of 374 control households have been covered from three districts in Tamil Nadu. More than three fifth of the households covered (67.91 %) are under BPL category. The percentage of SC household is 13.64, The percentage of ST household is 15.78 and The percentage of other household is 70.59. Out of the 374 control household covered in Tamil Nadu 25.67 percent have kutchha houses, 58.56 percent have semi pucca houses, 13.37 have pucca houses and 2.41 percent does not own a house. It is identified that 91.71 percent of the houses surveyed have less than or equal to five family members. The sex ratio is 929.

In the three districts surveyed Salem has the highest percentage (72 %) of BPL household followed by Tirunelveli (69.35 %) and then Tiruvannamalai (62.4 %). Salem district have 11.2 percent of SC households, 20 percent of ST households and 68.8 percent of other households. Tirunelveli district have 20.16 percent of SC households, 3.23 percent of ST households and 76.61 percent of other households. Tiruvannamalai district have 9.6 percent of SC households, 24 percent of ST households and 66.4 percent of other households. In Salem district 20 percent of the control household surveyed is kutcha, 59.2 percent is semi pucca, 17.6 percent is pucca and 3.2 percent does not have own house. In Tirunelveli district 26.61 percent of the control household surveyed is kutcha, 54.84 percent is semi pucca, 14.52 percent is pucca and 4.03 percent does not have own house. In Tiruvannamalai district 30.4 percent of the control household surveyed is kutcha, 61.6 percent is semi pucca and 8 percent is pucca. Household with less than or equal to five family members is 94.4 percent in Salem, 89.52 percent in Tirunelveli and 91.2 percent in 91.2 in Tiruvannamalai. The sex ratios in Salem, Tirunelveli and Tiruvannamalai districts are 885, 911 and 996 respectively. *Profile of control households covered under the study is given in Table . 3.5*

A comparison between sample habitations & sample households and control habitations & control households are given an impression that the location of habitations for PMGSY implementation is quite justifiable. It is more evident from the analysis of the details of the profile of habitations and households under two categories. This justifiable selection of habitations for the implementation of PMGSY has made an overall impact in local economic development in the sample habitations.

**Table 3.5. Profile of households (control) covered under the study***(% of households)*

District	No. of control house holds covered	BPL Status		Caste			Ownership of house				Size of households (no. of members)		Gender Ratio (female per 1000 male)
		APL	BPL	SC	ST	Others	Kutcha	Semi-Pucca	Pucca	Does not own a house	≤ 5	6 to 10	
Salem	125	28	72	11.2	20	68.8	20	59.2	17.6	3.2	94.4	5.6	885
Tirunelveli	124	30.65	69.35	20.16	3.23	76.61	26.61	54.84	14.52	4.03	89.52	10.48	911
Tiruvannamalai	125	37.6	62.4	9.6	24	66.4	30.4	61.6	8	0	91.2	8.8	996
<b>Tamilnadu</b>	<b>374</b>	<b>32.09</b>	<b>67.91</b>	<b>13.64</b>	<b>15.78</b>	<b>70.59</b>	<b>25.67</b>	<b>58.56</b>	<b>13.37</b>	<b>2.41</b>	<b>91.71</b>	<b>8.29</b>	<b>929</b>

Source : Field Survey

## **Chapter 4**

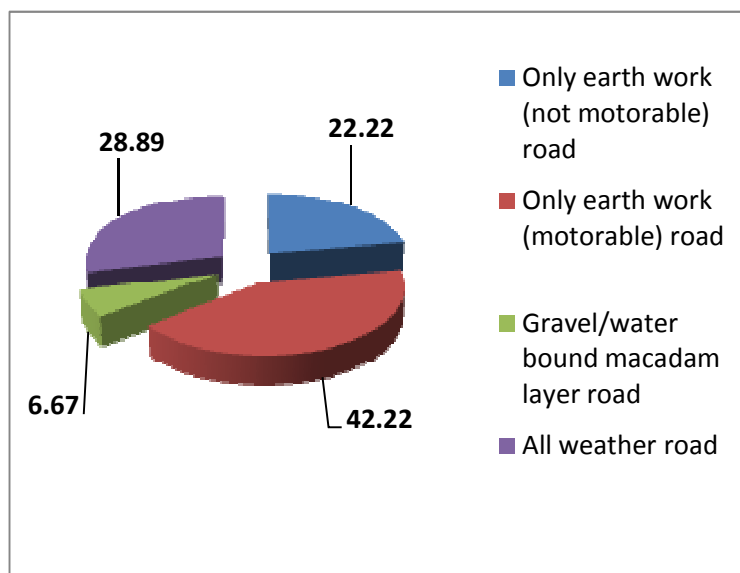
### **Connectivity Provided by PMGSY**

#### **4.1. Type of Road Access to the Sample Habitations before PMGSY**

Before the implementation of PMGSY only 28.89 percent of sample habitations covered in Tamil Nadu had all weather pucca roads, 6.67 percent have gravel/water bound macadam layer road, 42.22 percent have earth work (motorable) road and 22.22 percent have earth work (not motorable) road. *Refer Table 4.1 & Figure 4.1.*

In Salem district 13.33 percent of the sample habitations had all weather pucca roads, 6.67 percent have gravel/water bound macadam layer road, 53.33 percent have earth work (motorable) road and 26.67 percent have earth work (not motorable) road. In Tirunelveli district 6.67 percent of the sample habitations had all weather pucca roads, 6.67 percent have gravel/water bound macadam layer road, 53.33 percent have earth work (motorable) road and 33.33 percent have earth work (not motorable) road. In Tiruvannamalai district 66.67 percent of the sample habitations had all weather pucca roads, 6.67 percent have gravel/water bound macadam layer road, 20 percent have earth work (motorable) road and 6.67 percent have earth work (not motorable) road. *Refer Table 4.1.*

**Figure 4.1: Type of Road Access to Sample Habitations before PMGSY**



Source: Figure generated from Table 4.1

**Table 4.1. Connectivity status of sample habitations before PMGSY**

S. No.	District	No. of Districts Covered	Habitations Covered	Type of Road access (% of habitations)			
				Only earth work (not motorable) road	Only earth work (motorable) road	Gravel/water bound macadam layer road	All weather road
1	Salem	1	15	26.67	53.33	6.67	13.33
2	Tirunelveli	1	15	33.33	53.33	6.67	6.67
3	Tiruvannamalai	1	15	6.67	20.00	6.67	66.67
<b>Tamilnadu</b>		<b>3</b>	<b>45</b>	<b>22.22</b>	<b>42.22</b>	<b>6.67</b>	<b>28.89</b>

Source : Field Survey

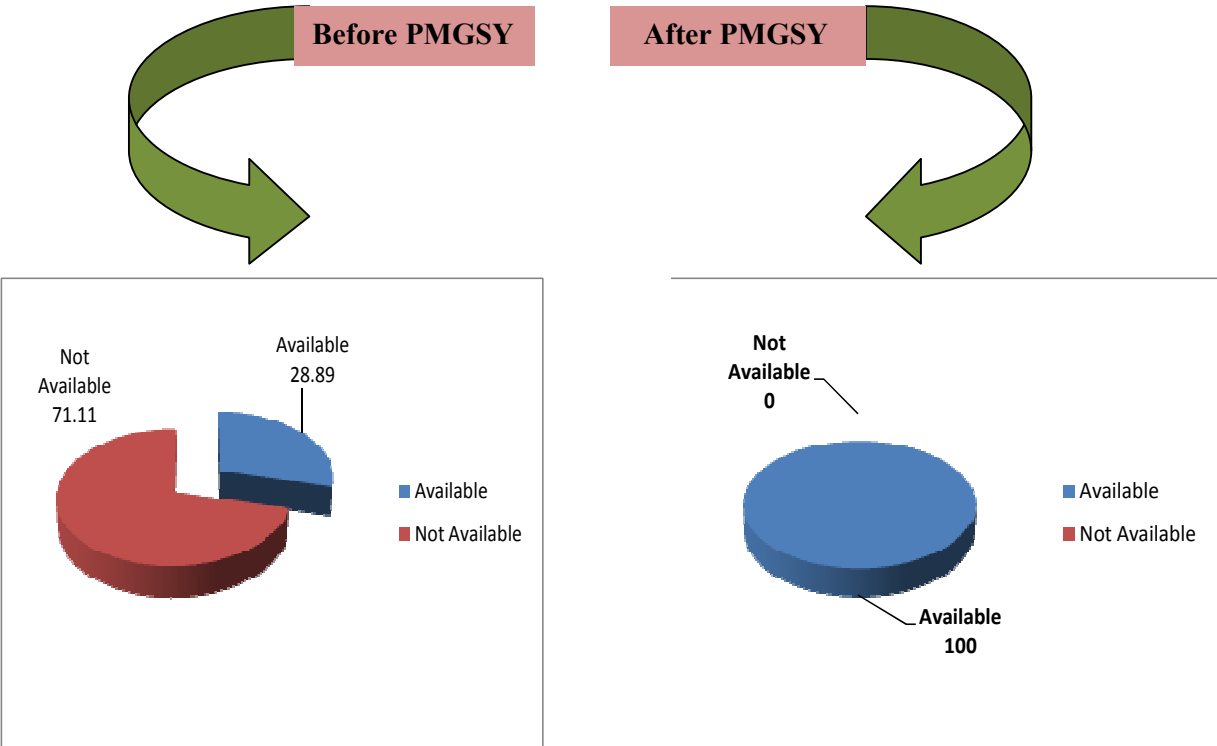
#### **4.2. Changes in all Season Motorized Access after PMGSY**

Out of the 45 habitations covered in three districts of Tamil Nadu the percentage of habitations enjoying all weather road connectivity rose from 28.89 percent to cent percent after the implementation of PMGSY. The number of days, the roads remaining closed to traffic in a year declined from 90 days to zero after PMGSY is implemented.



In Salem district the percentage of habitations enjoying all weather road connectivity rose from 13.33 percent to cent percent after the implementation of PMGSY. The number of days, the roads remaining closed to traffic in a year declined from 131 days to zero. In Tirunelveli district the percentage of habitations enjoying all weather road connectivity rose from 20 percent to cent percent after the implementation of PMGSY. The number of days, the roads remaining closed to traffic in a year declined from 66 days to zero. In Tiruvannamalai district the percentage of habitations enjoying all weather road connectivity rose from 53.33 percent to cent percent after the implementation of PMGSY. The number of days, the roads remaining closed to traffic in a year declined from 55 days to zero. *Figure 4.2 and Table 4.2 provides changes in all season motorized access to sample habitations before and after PMGSY.*

**Figure 4.2: All Season Motorized Access**



Source: Figure generated from Table 4.2

Source: Figure generated from Table 4.2

**Table 4.2 Change in all season motorized access to sample habitations before and after PMGSY**

(*% of habitations*)

S. No.	District	No. of Districts Covered	Habitations Covered	All season motorized access before PMGSY Road			All season motorized access after PMGSY Road		
				Available	Not Available	If not available, average no. of days closed	Available	Not Available	If not available, average no. of days closed
1	Salem	1	15	13.33	86.67	131	100	0	0
2	Tirunelveli	1	15	20	80	66	100	0	0
3	Tiruvannamalai	1	15	53.33	46.67	55	100	0	0
<b>Tamilnadu</b>		<b>3</b>	<b>45</b>	<b>28.89</b>	<b>71.11</b>	<b>90</b>	<b>100</b>	<b>0</b>	<b>0</b>

Source : Field Survey

### **4.3. Status of Connectivity to Important Facilities Post-PMGSY**

After the implementation of PMGSY the sample habitations can access the facilities outside their habitation by using PMGSY roads. For example 13.33 percent of habitation uses PMGSY road for reaching the nearest primary school outside their habitation. *The connectivity status to important facilities is given in the table 4.3.*

#### **4.3.1 Connectivity to Educational Facilities.**

In 88.44 percent of habitations have the facility of anganwadi centre with in their respective habitations. In the remaining 15.56 percent of habitations students have to travel an average distance of 2.43 kms to access the nearest anganwadi centre outside their habitations by using PMGSY and other pucca road network, where 8.89 percent are using PMGSY road. Students have to move an average distance of 3.43 kms to attend the nearest primary school from 15.56 percent of habitations. In this case, 13.33 percent are using PMGSY road and remain percent by other pucca road. It is reported that 37.78 percent of habitations have secondary school within their respective habitations. Students from remaining habitations

have to travel an average distance of 5.14 kms to reach their schools by using PMGSY road (13.33 percent) and other pucca road (37.78 percent)

Around 13 percent of habitations have higher secondary schools in their respective habitations and students from remaining habitations have to travel an average distance of 9.82 kms to attend the schools. It is reported that students from 20 percent of habitations are using PMGSY road. Students from all the habitations have to travel an average distance of more than 25 kms to attend the nearest degree college / university / vocational training centre / institute outside their habitations, where only 6.67 percent are using PMGSY road and remaining 91.11 percent using other pucca road. The above analysis shows that people in the sample habitations have better access to educational facilities thanks to PMGSY. *Figure 4.3 gives the connectivity to educational facilities of all weather roads in sample and control habitations.* It is clear that people in the sample habitations have better access due to PMGSY.

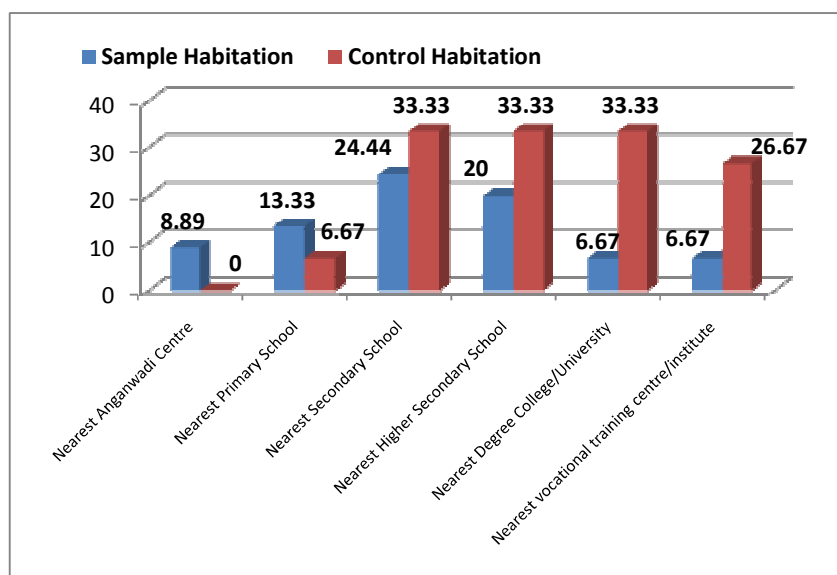
<b>Table 4.3. Connectivity status to important facilities of sample habitations after PMGSY</b>						
<i>(% of Habitations)</i>						
S.No.	Facility	Facility within the habitation	Facility outside the habitation access by			
			PMGSY road	Other pucca road	Kuccha road	Avg. distance in km
1	Nearest Anganwadi Centre	84.44	8.89	6.67	0.00	2.43
2	Nearest Primary School	84.44	13.33	2.22	0.00	3.43
3	Nearest Secondary School	37.78	24.44	37.78	0.00	5.14
4	Nearest Higher Secondary School	13.33	20.00	64.44	2.22	9.82
5	Nearest Degree College/University	0.00	6.67	91.11	2.22	30.91
6	Nearest vocational training centre/institute	0.00	6.67	91.11	2.22	25.13
7	Nearest Health Sub- Centre	28.89	17.78	53.33	0.00	10.59
8	Nearest Public Health Centre (PHC)	20.00	17.78	62.22	0.00	9.89
9	Nearest Community Health Centre (CHC)	15.56	15.56	68.89	0.00	11.76
10	Nearest Govt. Hospital	0.00	8.89	91.11	0.00	17.51
11	Nearest Pvt. Hospital/Nursing Home	4.44	13.33	82.22	0.00	11.72
12	Nearest Veterinary hospital/centre	4.44	15.56	77.78	2.22	7.72
13	Local Police Station	0.00	8.89	88.89	2.22	8.87

14	Local Police Post	8.89	6.67	82.22	2.22	12.39
15	Nearest Agricultural Market/Mandi (Regular)	8.89	8.89	80.00	2.22	16.34
16	Nearest Agricultural Market/Mandi (Seasonal)	15.56	13.33	68.89	2.22	14.11
17	Nearest PDS shop	62.22	20.00	17.78	0.00	6.71
18	Nearest town/urban center	13.33	13.33	68.89	4.44	18.21
19	Nearest Bank	8.89	15.56	71.11	4.44	7.24
20	Nearest Post office	31.11	17.78	48.89	2.22	7.10
21	Nearest market for buying household supplies	33.33	6.67	57.78	2.22	9.40
22	G.P office	40.00	13.33	42.22	4.44	11.11
23	Block office	6.67	4.44	86.67	2.22	15.60
24	SDM/SDO office	2.22	2.22	95.56	0.00	25.77
25	District Headquarter	2.22	0.00	97.78	0.00	47.71

Source : Field Survey

In the case of control habitations, which are not yet connected by PMGSY roads, they use mainly earth work roads for the facilities outside their habitations. *The connectivity status to important facilities in control habitation is given in the table 4.3(a).*

**Figure 4.3: Connectivity to Educational Facilities by All Weather Roads**



Source: Figure generated from Tables 4.3 & 4.3 (a)

**Table 4.3 (a) Connectivity status to important facilities of Control Habitations (Current Status)**

*(% of Habitations)*

S. No.	Facility	Facility within the habitation	Facility outside the habitation access by				
			Only Earth Work road (Not motorable)	Only Earth Work road (Motorable)	Gravel/ water bound macadam layer road	All weather road	Avg. distance in km
1	Nearest Anganwadi Centre	100.00	0.00	0.00	0.00	0.00	0.00
2	Nearest Primary School	80.00	6.67	6.67	0.00	6.67	1.33
3	Nearest Secondary School	20.00	0.00	40.00	6.67	33.33	5.00
4	Nearest Higher Secondary School	6.67	6.67	46.67	6.67	33.33	9.71
5	Nearest Degree College/University	0.00	6.67	53.33	6.67	33.33	14.20
6	Nearest vocational training centre/institute	0.00	6.67	60.00	6.67	26.67	15.27
7	Nearest Health Sub-Centre	33.33	6.67	40.00	6.67	13.33	5.20
8	Nearest Public Health Centre (PHC)	20.00	6.67	40.00	6.67	26.67	5.50
9	Nearest Community Health Centre (CHC)	13.33	6.67	40.00	6.67	33.33	7.23
10	Nearest Govt. Hospital	0.00	6.67	46.67	6.67	40.00	8.67
11	Nearest Pvt. Hospital/Nursing Home	0.00	6.67	46.67	6.67	40.00	6.00
12	Nearest Veterinary hospital/centre	26.67	6.67	33.33	6.67	26.67	6.00
13	Local Police Station	0.00	6.67	46.67	6.67	40.00	7.13
14	Local Police Post	0.00	6.67	46.67	6.67	40.00	6.40
15	Nearest Agricultural Market/Mandi (Regular)	6.67	6.67	40.00	6.67	40.00	10.79
16	Nearest Agricultural Market/Mandi (Seasonal)	6.67	6.67	33.33	13.33	40.00	12.14
17	Nearest PDS shop	80.00	6.67	0.00	0.00	13.33	5.33
18	Nearest town/urban center	0.00	6.67	33.33	6.67	53.33	7.33
19	Nearest Bank	6.67	6.67	26.67	6.67	53.33	6.29
20	Nearest Post office	53.33	0.00	20.00	0.00	26.67	5.71
21	Nearest market for buying household supplies	26.67	6.67	33.33	0.00	33.33	6.73
22	G.P office	60.00	0.00	26.67	0.00	13.33	8.00
23	Block office	6.67	6.67	33.33	6.67	46.67	14.36
24	SDM/SDO office	0.00	13.33	26.67	6.67	53.33	23.53
25	District Headquarter	0.00	13.33	26.67	6.67	53.33	46.27

Source : Field Survey

#### **4.3.2 Connectivity to Health Facilities.**

People from 71.11 percent of habitations have to travel an average distance of 10 kms to get the service of the nearest health sub centre, where 17.78 percent are using PMGSY road and 53.33 percent using other pucca road. To access the nearest public health centre, people from 80 percent of habitations have to go out by using PMGSY road and other pucca road. In this case, again 17.78 percent of habitations are using PMGSY road. Since there is no Government Hospital in the sample habitations the entire people from all the habitations have to go far - away places to access the health facilities by traveling an average distance of 17.51 kms. To access the service of the health facilities, people are using both the roads under PMGSY and other pucca road and the share of habitations by using PMGSY road in 8.89 percent. To access the nearest private hospital and nursing home, people from 13.33 percent of habitations are utilizing the PMGSY road. The respective figure for using the service of nearest Veterinary Hospital / Centre is 15.56 percent. *Figure 4.4 gives the connectivity to health facilities by all weather roads in sample and control habitations*

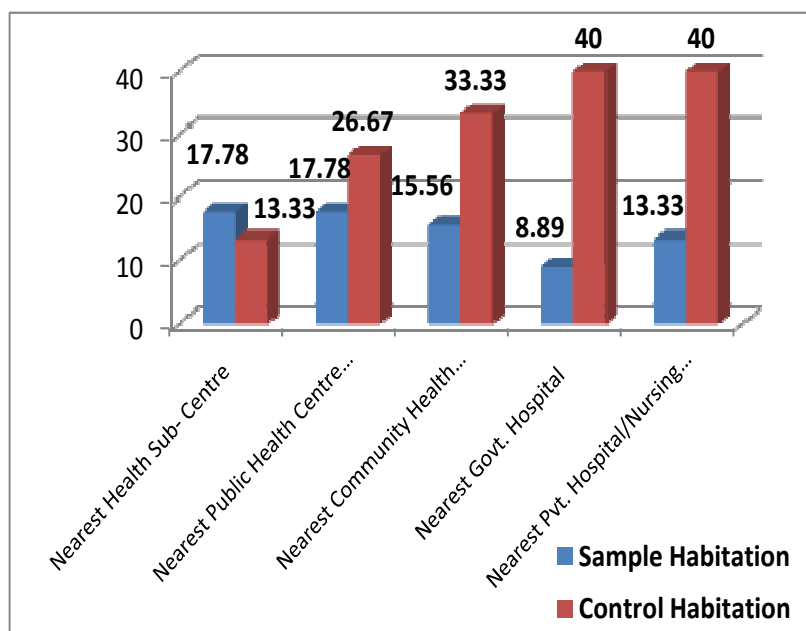
#### **4.3.3. Connectivity to Market Facilities**

People from around 90 percent of the sample habitations have to go out to participate in the regular market by covering an average distance of 16.34 kms. Out of this 8.89 percent are using PMGSY road where as 80 percent using other pucca road. PMGSY road provides connectivity to 13.33 percent of habitations to participate in seasonal market. In 62.22 percent of sample habitations have PDS shops and the people from the remaining habitation have to travel an average distance of 6.71 kms by using different types of roads (PMGSY, Other Pucca road and Kaccha road). In this case, PMGSY roads provide connectivity services to 20 percent of habitations. PMGSY roads also provide connectivity service to 13.33 percent of habitation to reach nearest town / urban centre. *Figure 4.5 shows the connectivity to market facilities by all weather roads in both sample and control habitations.*

#### 4.3.4 Connectivity to Administration Establishment.

In 40 percent cases Gram Panchayats are functioning within the sample habitations themselves. In the remaining habitations, people have to travel an average distance of 11 kms by using PMGSY road/ Other Pucca road / Kaccha road. Their contributions are 13.33 percent, 42.22 percent and 4.44 percent respectively. People from more than 93 percent of habitations have to travel an average distance of more than 15 km to avail the service of the block office and for covering this distance, 4.44 percent habitations are using PMGSY road. In 97.78 percent of habitations, people have to travel an average distance of 25.77 kms to avail the service of the SDM/SDO offices, where 2.22 percent are using PMGSY road and 95.56 using other pucca road. It is reported that people from 17.18 percent of habitations are using PMGSY road to access the service of Post Office. *Figure 4.6 provides the connectivity to administration establishment by all weather roads in sample and control habitations.*

**Figure 4.4: Connectivity to Health Facilities by All Weather Roads**

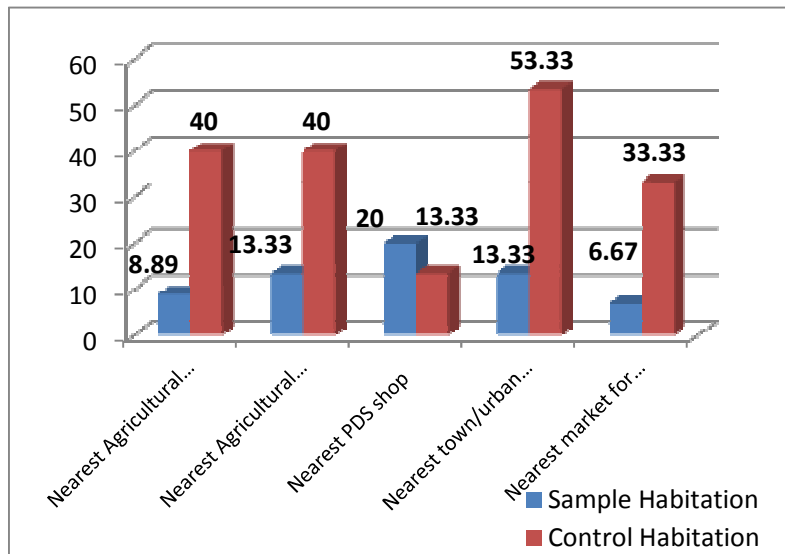


Source: Figure generated from Tables 4.3 & 4.3 (a)

#### 4.4. Changes & Improvements in Public Transport Post PMGSY

This section deals with the changes and improvements occurred in the public transport commuting & load carriage services after PMGSY road was operative. After the implementation of PMGSY, the number of vehicles traveling in and out of the habitations has increased very much.

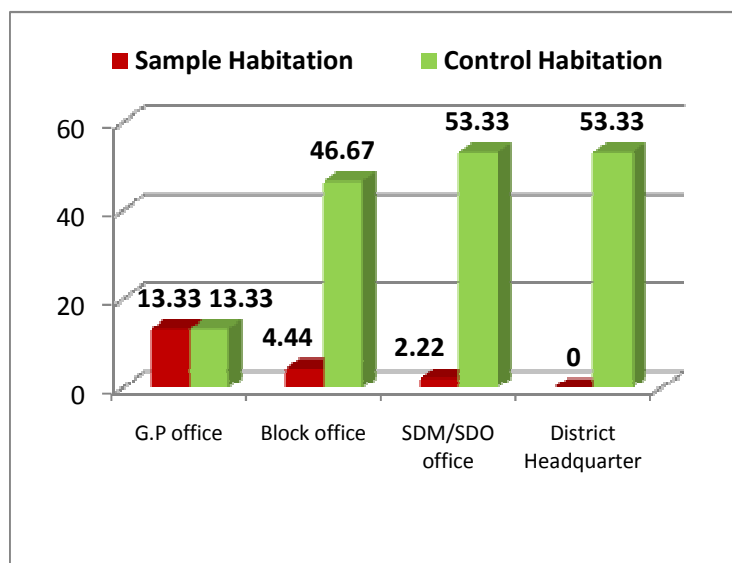
**Figure 4.5: Connectivity to Market Facilities by All Weather Roads**



Source: Figure generated from Tables 4.3 & 4.3 (a)



**Figure 4.6: Connectivity to Administration Establishments by All Weather Roads**



Source: Figure generated from Tables 4.3 & 4.3 (a)

#### **4.4.1. Changes in Public Transport Commuting Services after PMGSY for Sample Habitations**

People mainly depend on bus, auto rickshaws, jeep and car to travel in and out of the habitations. This part describes the changes occurred in the number of bus, auto rickshaws, jeep/car and other vehicles plying in and out of habitations on weekly basis after PMGSY road was operative in the sample habitations. *Refer table A.1 in Appendix.*

##### **4.4.1. a. Changes in the Number of Buses**

Out of the 45 habitations in Tamil Nadu, 55.56 percent of habitations have not started bus services even after the implementation of PMGSY. But in 28.89 percent of habitations the number of buses plying in and out of habitations has increased from none to one, in 6.67 percent of habitations there is no change in the number of buses and in 8.89 percent of habitations the number of bus is increased (the number of bus is double or more). *Refer table A.1 in Appendix*

In Salem district 26.67 percent of habitations have not started bus services even after the implementation of PMGSY. But in 53.33 percent of habitations the number of buses plying in and out of habitations have increased from none to one and in 20 percent of habitations the number of bus is increased (the number of bus is double or more). In Tirunelveli district 73.33 percent of habitations have not started bus services even after the implementation of PMGSY. The percentages of habitations where the number of buses plying in and out of habitations have increased from none to one and same as the number before the implementation of PMGSY are equal and it is 13.33 percent. In Tiruvannamalai district 66.67 percent of habitations have not started bus services even after the implementation of PMGSY. But in 20 percent of habitations the number of buses has plying in and out of habitations is increased from none to one. There is equal number of sample habitations (6.67 %) where there is no change in the number of buses and the number of bus is increased (the number of bus is double or more). *Refer table A.1 in Appendix*

#### **4.4.1. b. Changes in the Number of Auto Rickshaws**

In Tamil Nadu 13.33 percent of habitations have no auto rickshaws plying in and out of habitations even after the implementation of PMGSY. But in 35.56 percent of habitations the number of auto rickshaws plying has increased from none to one, in 4.44 percent of habitations there is no change in the number of auto rickshaws and in 46.67 percent of habitations the number of auto rickshaws is increased (the number of auto rickshaws is just increased for 22.23 percent of habitations and the number is doubled or more for 24.44 percent of habitations). *Refer table A.1 in Appendix*

In Salem district 20 percent of habitations have no auto rickshaws plying in and out of habitations even after the implementation of PMGSY. But in 26.67 percent of habitations the number of auto rickshaws has increased from none to one and in 53.33 percent of habitations the number of auto rickshaws is increased (the number of auto rickshaws is just increased for 6.66 percent of habitations and the number is doubled or more for 46.67

percent of habitations). In Tirunelveli district 13.33 percent of habitations have no auto rickshaws plying in and out of habitations even after the implementation of PMGSY. But in 40 percent of habitations the number of auto rickshaws has increased from none to one, in 13.33 percent of habitations there is no change in the number of auto rickshaws and in 33.33 percent of habitations the number of auto rickshaws is increased (the number of auto rickshaws is just increased for 26.66 percent of habitations and the number is doubled or more for 6.67 percent of habitations). In Tiruvannamalai district 6.67 percent of habitations have no auto rickshaws plying in and out of habitations even after the implementation of PMGSY. But in 40 percent of habitations the number of auto rickshaws has increased from none to one and in 53.33 percent of habitations the number of auto rickshaws is increased (the number of auto rickshaws is just increased for 33.33 percent of habitations and the number is doubled or more for 20 percent of habitations). *Refer table A.1 in Appendix*

#### **4.4.1. c. Changes in the Number of Jeep/Car**

Out of the sample habitations in Tamil Nadu, 15.56 percent of habitations have no jeep/car services even after the implementation of PMGSY. But in 33.33 percent of habitations the number of jeep/car plying in and out of habitations has increased from none to one, in 6.67 percent of habitations there is no change in the number of jeep/car and in 44.44 percent of habitations the number of jeep/car is increased (the number of jeep/car is just increased for 22.22 percent of habitations and the number is doubled or more for 22.22 percent of habitations). *Refer table A.1 in Appendix*

In Salem district 20 percent of habitations have no jeep/car services even after the implementation of PMGSY. But in 26.67 percent of habitations the number of jeep/car plying in and out of habitations has increased from none to one and in 53.33 percent of habitations the number of jeep/car is increased (the number of jeep/car is just increased for 13.33 percent of habitations and the number is doubled or more for 40 percent of habitations). In Tirunelveli district 20 percent of habitations have no

jeep/car services even after the implementation of PMGSY. But in 33.33 percent of habitations the number of jeep/car plying in and out of habitations has increased from none to one, in 13.33 percent of habitations there is no change in the number of jeep/car and in 33.33 percent of habitations the number of jeep/car is increased (the number of jeep/car is just increased for 20 percent of habitations and the number is doubled or more for 13.33 percent of habitations). In Tiruvannamalai district 6.67 percent of habitations have no jeep/car services even after the implementation of PMGSY. But in 40 percent of habitations the number of jeep/car plying in and out of habitations has increased from none to one, in 6.67 percent of habitations there is no change in the number of jeep/car and in 46.67 percent of habitations the number of jeep/car is increased (the number of jeep/car is just increased for 33.34 percent of habitations and the number is doubled or more for 13.33 percent of habitations). *Refer table A.1 in Appendix*

#### **4.4.1. d. Changes in the Number of other vehicles**

In Tamil Nadu 15.56 percent of habitations have no other type of vehicles (other than bus, auto rickshaws, jeep or car) plying in and out of habitations even after the implementation of PMGSY. But in 33.33 percent of habitations the number of other vehicles has increased from none to one, in 6.67 percent of habitations there is no change in the number of other vehicles and in 44.44 percent of habitations the number of other vehicles is increased (the number of other vehicles is just increased for 31.11 percent of habitations and the number is doubled or more for 13.33 percent of habitations).

In Salem district 20 percent of habitations have no other type of vehicles plying in and out of habitations even after the implementation of PMGSY. But in 26.67 percent of habitations the number of other vehicles has increased from none to one, in 6.67 percent of habitations there is no change in the number of other vehicles and in 46.67 percent of habitations the number of other vehicles is increased (the number of other vehicles is

just increased for 26.67 percent of habitations and the number is doubled or more for 20 percent of habitations). In Tirunelveli district 20 percent of habitations have no other type of vehicles plying in and out of habitations even after the implementation of PMGSY. But in 33.33 percent of habitations the number of other vehicles has increased from none to one, in 13.33 percent of habitations there is no change in the number of other vehicles and in 33.33 percent of habitations the number of other vehicles is increased (the number of other vehicles is just increased for 26.66 percent of habitations and the number is doubled or more for 6.67 percent of habitations). In Tiruvannamalai district 6.67 percent of habitations have no other type of vehicles plying in and out of habitations even after the implementation of PMGSY. But in 40 percent of habitations the number of other vehicles has increased from none to one and in 53.33 percent of habitations the number of other vehicles is increased (the number of other vehicles is just increased for 40 percent of habitations and the number is doubled or more for 13.33 percent of habitations). *Refer table A.1 in Appendix*

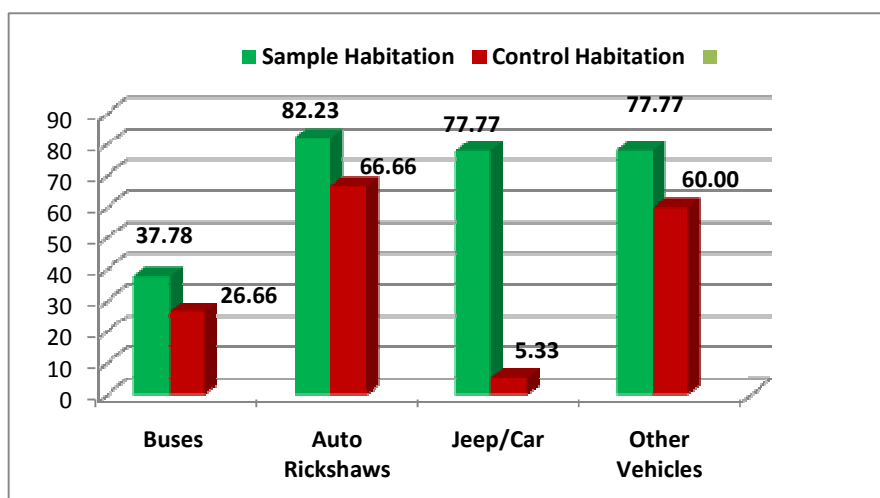
#### **4.4.2. Changes in Public Transport Commuting Services during the Period for Control Habitations**

In the case of control habitations during the period number of vehicles plying in and out of the habitation is increased for some of the habitations. Out of the 15 control habitations in Tamil Nadu, the number of bus is increased for 13.33 percent of habitations, number of auto rickshaws is increased for 53.33 percent of habitations, number of jeep/car is increased for 40 percent of habitations and the number of other vehicles is increased for 46.67 percent of habitations (*Refer table A.2 in Appendix*).

In Salem number of bus is increased for 40 percent of control habitations and number of auto rickshaws is increased for 40 percent of habitations. There is no increase in the number of jeep/car and other vehicles in the control habitations of Salem. In Tirunelveli district number of auto rickshaws is increased for 40 percent of control habitations, number of

jeep/car is increased for 60 percent of habitations and the number of other vehicles is increased for 60 percent of habitations. There is no increase in the number of buses in the control habitations of Tirunelveli. In Tiruvannamalai district number of auto rickshaws is increased for 80 percent of control habitations, number of jeep/car is increased for 60 percent of habitations and the number of other vehicles is increased for 80 percent of habitations. There is no increase in the number of buses in the control habitations of Tiruvannamalai district.

**Figure 4.7: Increase in the Number of Public Transport Commuting Services**



Source: Figure generated from Tables A.1, A.2 & A.3 in Appendix

#### **4.4.3. Changes in Public Transport Load Carriage Services after PMGSY for Sample Habitations**

This part describes the changes in the number of load carriage services such as light truck, medium truck, heavy truck, pick up truck/van, tractor-trolley and other vehicles plying in and out of the habitations on weekly basis after PMGSY road was operative in the sample habitations. *Refer table A.3 in Appendix.*

#### **4.4.3.a. Changes in Light Truck**

Out of the 45 sample habitations in Tamil Nadu 48.89 percent of habitations have no light truck plying in and out of habitations even after the implementation of PMGSY. But in 26.67 percent of habitations the number of light truck plying has increased from none to one, in 4.44 percent of habitations there is no change in the number of light truck and in 20 percent of habitations the number of light truck is increased (the number of light truck is just increased for 11.11 percent of habitations and the number is doubled or more for 8.89 percent of habitations).

In Salem district 53.33 percent of habitations have no light truck plying in and out of habitations even after the implementation of PMGSY. But in 33.33 percent of habitations the number of light truck plying has increased from none to one and in 13.33 percent of habitations the number of light truck is increased (the number of light truck is just increased for 6.66 percent of habitations and the number is doubled or more for 6.67 percent of habitations). In Tirunelveli district 73.33 percent of habitations have no light truck plying in and out of habitations even after the implementation of PMGSY. But in 20 percent of habitations the number of light truck plying has increased from none to one and in 6.67 percent of habitations the number of light truck is increased. In Tiruvannamalai district 20 percent of habitations have no light truck plying in and out of habitations even after the implementation of PMGSY. But in 26.67 percent of habitations the number of light truck plying has increased from none to one, in 13.33 percent of habitations there is no change in the number of light truck and in 40 percent of habitations the number of light truck is increased (the number of light truck is just increased for 20 percent of habitations and the number is doubled or more for 20 percent of habitations).

#### **4.4.3.b. Changes in Medium Truck**

In Tamil Nadu 48.89 percent of habitations have no medium truck plying in and out of habitations even after the implementation of PMGSY. But in 26.67 percent of habitations the number of medium truck plying has

increased from none to one, in 4.44 percent of habitations there is no change in the number of medium truck and in 17.78 percent of habitations the number of medium truck is increased (the number of medium truck is just increased for 4.45 percent of habitations and the number is doubled or more for 13.33 percent of habitations). No answer is reported for 2.22 percent of habitations.

In Salem district 53.33 percent of habitations have no medium truck plying in and out of habitations even after the implementation of PMGSY. But in 40 percent of habitations the number of medium truck plying has increased from none to one and in 6.67 percent of habitations the number of medium truck is increased (the number is doubled or more). In Tirunelveli district 53.33 percent of habitations have no medium truck plying in and out of habitations even after the implementation of PMGSY. But in 26.67 percent of habitations the number of medium truck plying has increased from none to one, in 6.67 percent of habitations there is no change in the number of medium truck and in 13.33 percent of habitations the number of medium truck is increased (the number is doubled or more). In Tiruvannamalai district 40 percent of habitations have no medium truck plying in and out of habitations even after the implementation of PMGSY. But in 13.33 percent of habitations the number of medium truck plying has increased from none to one, in 6.67 percent of habitations there is no change in the number of medium truck and in 33.33 percent of habitations the number of medium truck is increased (the number of medium truck is just increased for 13.33 percent of habitations and the number is doubled or more for 20 percent of habitations). No answer is reported for 6.67 percent of habitations.

#### **4.4.3.c. Changes in Heavy Truck**

Out of the surveyed habitations in Tamil Nadu, 64.44 percent of habitations have no heavy truck plying in and out of habitations even after the implementation of PMGSY. But in 20 percent of habitations the number of heavy truck plying has increased from none to one, in 2.22 percent of habitations there is no change in the number of heavy truck and in 13.33



percent of habitations the number of heavy truck is increased (the number of heavy truck is just increased for 6.66 percent of habitations and the number is doubled or more for 6.67 percent of habitations).

In Salem district 86.67 percent of habitations have no heavy truck plying in and out of habitations even after the implementation of PMGSY. But in 13.33 percent of habitations the number of heavy truck plying has increased from none to one. In Tirunelveli district 80 percent of habitations have no heavy truck plying in and out of habitations even after the implementation of PMGSY. But in 13.33 percent of habitations the number of heavy truck plying has increased from none to one and in 6.67 percent of habitations the number of heavy truck is increased (the number is doubled or more). In Tiruvannamalai district 26.67 percent of habitations have no heavy truck plying in and out of habitations even after the implementation of PMGSY. But in 33.33 percent of habitations the number of heavy truck plying has increased from none to one, in 6.67 percent of habitations there is no change in the number of heavy truck and in 33.33 percent of habitations the number of heavy truck is increased (the number of heavy truck is just increased for 20 percent of habitations and the number is doubled or more for 13.33 percent of habitations).

#### **4.4.3.d. Changes in Pick-up Truck/ Van**

In Tamil Nadu 28.89 percent of habitations have no pick-up truck/van plying in and out of habitations even after the implementation of PMGSY. But in 33.33 percent of habitations the number of pick-up truck/van plying has increased from none to one, in 8.89 percent of habitations there is no change in the number of pick-up truck/van and in 28.89 percent of habitations the number of pick-up truck/van is increased (the number of pick-up truck/van is just increased for 8.89 percent of habitations and the number is doubled or more for 20 percent of habitations).

In Salem district 26.67 percent of habitations have no pick-up truck/van plying in and out of habitations even after the implementation of PMGSY.

But in 46.67 percent of habitations the number of pick-up truck/van plying has increased from none to one and in 26.67 percent of habitations the number of pick-up truck/van is increased (the number is doubled or more). In Tirunelveli district 53.33 percent of habitations have no pick-up truck/van plying in and out of habitations even after the implementation of PMGSY. But in 26.67 percent of habitations the number of pick-up truck/van plying has increased from none to one and in 20 percent of habitations the number of pick-up truck/van is increased (the number of pick-up truck/van is just increased for 13.33 percent of habitations and the number is doubled or more for 6.67 percent of habitations). In Tiruvannamalai district 6.67 percent of habitations have no pick-up truck/van plying in and out of habitations even after the implementation of PMGSY. But in 26.67 percent of habitations the number of pick-up truck/van plying has increased from none to one, in 26.67 percent of habitations there is no change in the number of pick-up truck/van and in 40 percent of habitations the number of pick-up truck/van is increased (the number of pick-up truck/van is just increased for 13.33 percent of habitations and the number is doubled or more for 26.67 percent of habitations).

#### **4.4.3.e. Changes in Tractor-Trolley**

In Tamil Nadu 26.67 percent of habitations have no tractor-trolley plying in and out of habitations even after the implementation of PMGSY. But in 28.89 percent of habitations the number of tractor-trolley plying has increased from none to one, in 4.44 percent of habitations there is no change in the number of tractor-trolley and in 40 percent of habitations the number of tractor-trolley is increased (the number of tractor-trolley is just increased for 22.22 percent of habitations and the number is doubled or more for 17.78 percent of habitations).

In Salem district 20 percent of habitations have no tractor-trolley plying in and out of habitations even after the implementation of PMGSY. But in 33.33 percent of habitations the number of tractor-trolley plying has

increased from none to one and in 46.67 percent of habitations the number of tractor-trolley is increased (the number of tractor-trolley is just increased for 20 percent of habitations and the number is doubled or more for 26.67 percent of habitations). In Tirunelveli district 53.33 percent of habitations have no tractor-trolley plying in and out of habitations even after the implementation of PMGSY. But in 26.67 percent of habitations the number of tractor-trolley plying has increased from none to one and in 20 percent of habitations the number of tractor-trolley is increased (the number of tractor-trolley is just increased for 13.33 percent of habitations and the number is doubled or more for 6.67 percent of habitations). In Tiruvannamalai district 6.67 percent of habitations have no tractor-trolley plying in and out of habitations even after the implementation of PMGSY. But in 26.67 percent of habitations the number of tractor-trolley plying has increased from none to one, in 13.33 percent of habitations there is no change in the number of tractor-trolley and in 53.33 percent of habitations the number of tractor-trolley is increased (the number of tractor-trolley is just increased for 33.33 percent of habitations and the number is doubled or more for 20 percent of habitations).

#### **4.4.3.f. Changes in Other Vehicles**

In Tamil Nadu 33.33 percent of habitations have no other load carriage vehicles plying in and out of habitations even after the implementation of PMGSY. But in 26.67 percent of habitations the number of other vehicles plying has increased from none to one, in 4.44 percent of habitations there is no change in the number of other vehicles and in 35.56 percent of habitations the number of other vehicles is increased (the number of other vehicles is just increased for 17.78 percent of habitations and the number is doubled or more for 17.78 percent of habitations).

In Salem district 40 percent of habitations have no other load carriage vehicles plying in and out of habitations even after the implementation of PMGSY. But in 26.67 percent of habitations the number of other vehicles plying has increased from none to one, in 6.67 percent of habitations there

is no change in the number of other vehicles and in 26.67 percent of habitations the number of other vehicles is increased (the number is doubled or more). In Tirunelveli district 53.33 percent of habitations have no other load carriage vehicles plying in and out of habitations even after the implementation of PMGSY. But in 26.67 percent of habitations the number of other vehicles plying has increased from none to one and in 20 percent of habitations the number of other vehicles is increased (the number of other vehicles is just increased for 6.67 percent of habitations and the number is doubled or more for 13.33 percent of habitations). In Tiruvannamalai district 6.67 percent of habitations have no other load carriage vehicles plying in and out of habitations even after the implementation of PMGSY. But in 26.67 percent of habitations the number of other vehicles plying has increased from none to one, in 6.67 percent of habitations there is no change in the number of other vehicles and in 60 percent of habitations the number of other vehicles is increased (the number of other vehicles is just increased for 46.67 percent of habitations and the number is doubled or more for 13.33 percent of habitations).

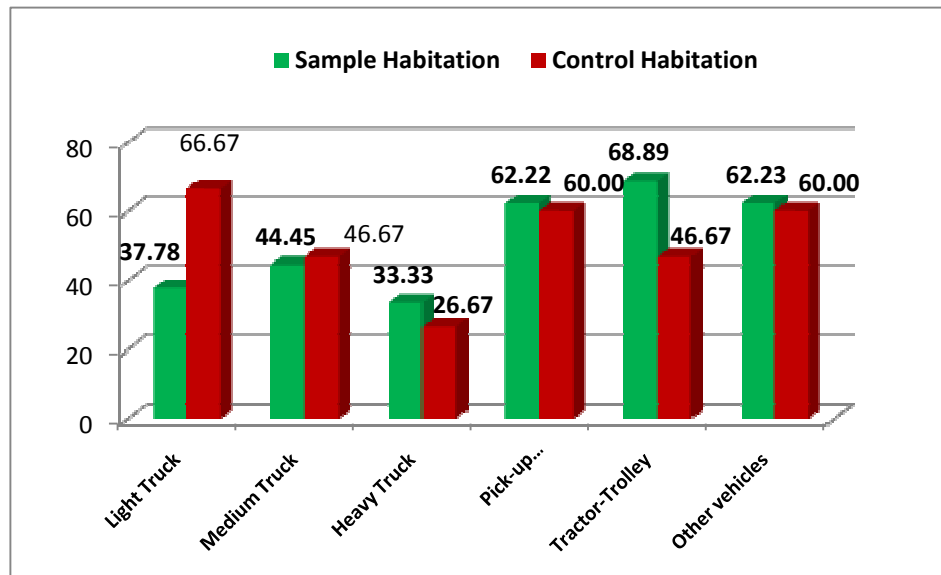
#### **4.4.4. Changes in Public Transport Load Carriage Services during the Period for Control Habitations**

Out of the 15 control habitations in Tamil Nadu the number of light truck plying in and out of the habitation on a week is increased for 60 percent of control habitations, number of medium truck is increased for 40 percent of habitations, number of heavy truck is increased for 20 percent of habitations, number of pick-up truck/van is increased for 53.33 percent of habitations, number of tractor-trolley is increased for 40 percent of habitations and the number of other load carriage vehicles is increased for 53.33 percent of habitations. *Refer table A.4 in Appendix.*

In Salem district the number of light truck plying in and out of the habitation on a week is increased for 60 percent of control habitations, number of medium truck is increased for 40 percent of habitations, number of heavy truck is increased for 20 percent of habitations, number of pick-up

truck/van is increased for 40 percent of habitations, number of tractor-trolley is increased for 20 percent of habitations and the number of other load carriage vehicles is increased for 20 percent of habitations. In Tirunelveli district the number of light truck plying in and out of the habitation on a week is increased for 80 percent of control habitations, number of medium truck is increased for 60 percent of habitations, number of heavy truck is increased for 20 percent of habitations, number of pick-up truck/van is increased for 60 percent of habitations, number of tractor-trolley is increased for 40 percent of habitations and the number of other load carriage vehicles is increased for 60 percent of habitations. In Tiruvannamalai district the number of light truck plying in and out of the habitation on a week is increased for 40 percent of control habitations, number of medium truck is increased for 20 percent of habitations, number of heavy truck is increased for 20 percent of habitations, number of pick-up truck/van is increased for 60 percent of habitations, number of tractor-trolley is increased for 60 percent of habitations and the number of other load carriage vehicles is increased for 80 percent of habitations.

**Figure 4.8: Increase in the Number of Public Transport Load Carriage Services**



Source: Figure generated from Tables A.1, A.2 & A.3 in Appendix

## **Chapter 5**

### **Impact on Agriculture**

#### **5.1. Change in Cropping Patterns**

The main crops grown in the surveyed habitations are cereals, pulses, vegetables and fruits. In some habitations there is a significant change in the cropping area after the PMGSY road become operative.

##### **5.1.1. Cereals**

In the sample habitations of Tamil Nadu the percentage of cropping area for cereals was 37.06 before PMGSY road and it is declined to 36.23 percent after PMGSY road. In Salem district the cropped area is declined from 33.47 percent to 32.27 percent. In Tirunelveli district the cropped area for cereals declined from 37.79 percent to 37.22 percent. But in Tiruvannamalai district the cropped area rise from 48.22 percent to 49.96 percent. *Refer Table 5.1.*

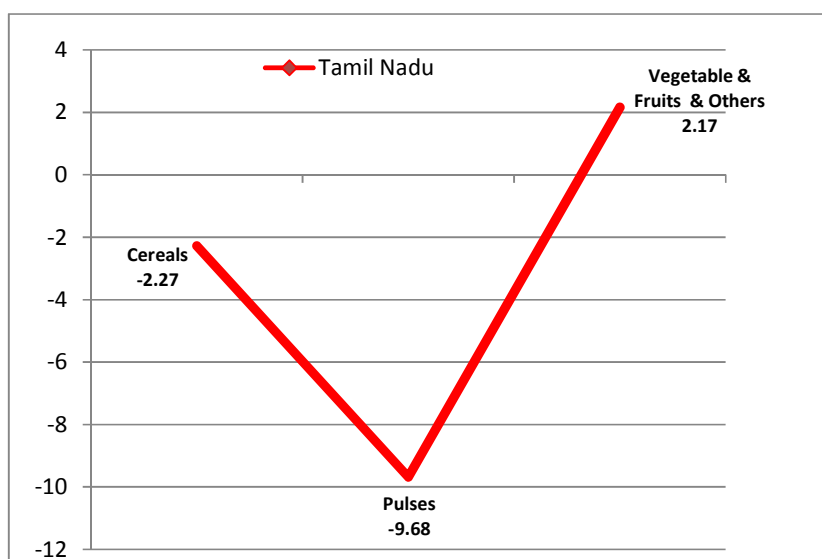
##### **5.1.2. Pulses**

In the 45 surveyed habitations of Tamil Nadu the cropping area for pulses was only 4.44 percent before PMGSY road and it is reduced to 4.02 percent after PMGSY road become operative. In Salem district the cropped area is declined from 2.12 percent to 1.82 percent. In Tirunelveli district the cropped area for pulses increased from 12.74 percent to 13.05 percent. *Refer Table 5.1.*

##### **5.1.3. Vegetables & Fruits**

In Tamil Nadu area under cultivation for vegetables and fruits increased from 58.49 percent to 59.76 percent after PMGSY road become operative. In Salem district the cropped area rise from 64.41 percent to 65.91 percent. In Tirunelveli district the cropped area is slightly increased from 49.48 percent to 49.72 percent. But in Tiruvannamalai district the cropped area decreased from 51.78 percent to 50.04 percent. *Refer Table 5.1.*

**Figure 5.1: Percentage of Change in Cropped Area**



Source: Figure generated from Table 5.1

**Table 5.1. Change in cropping pattern Before and After PMGSY Road**

S. No.	District	Cereals			Pulses			Vegetables, Fruits and Others		
		% cropped area before PMGSY	% cropped area after PMGSY	% change	% cropped area before PMGSY	% cropped area after PMGSY	% change	% cropped area before PMGSY	% cropped area after PMGSY	% change
1	Salem	33.47	32.27	-3.59	2.12	1.82	-14.62	64.41	65.91	2.34
2	Tirunelveli	37.79	37.22	-1.48	12.74	13.05	2.51	49.48	49.72	0.51
3	Tiruvannamalai	48.22	49.96	3.61	0	0	0	51.78	50.04	-3.36
<b>Tamilnadu</b>		<b>37.06</b>	<b>36.23</b>	<b>-2.27</b>	<b>4.44</b>	<b>4.02</b>	<b>-9.68</b>	<b>58.49</b>	<b>59.76</b>	<b>2.17</b>

Source : Field Survey

#### **5.1.4. Change in cropping pattern during the previous and current period in control habitations**

In the control habitations of Tamil Nadu the area used for cultivation of cereals shows an increase from 24.54 percent to 33.8 percent during the period. In the case of pulses the cropped area increased from 1.01 percent to 1.38 percent and for vegetables & fruits it is decreased from 74.45 percent to 64.82 percent. *Refer Table 5.1 (a).*

In the control habitations of Salem district the area used for cultivation of cereals increased from 18.27 percent to 27.99 percent and for vegetables &

fruits it is decreased from 81.73 percent to 72.01 percent. In the control habitations of Tirunelveli district the area used for cultivation of cereals increased from 61.79 percent to 64.4 percent, for pulses it is increased from 5.69 percent to 5.93 percent and for vegetables & fruits it is declined from 32.52 percent to 29.67 percent. In the control habitations of Tiruvannamalai district the cropped area under cereals increased from 40.44 percent to 40.89 percent, for pulses it is increased from 4.18 percent to 4.22 percent and for vegetables & fruits it is decreased from 55.38 percent to 54.88 percent.

**Table 5.1 (a) Change in cropping pattern during the previous and current period in control habitations**

S. No.	District	Cereals			Pulses			Vegetables,Fruits and Others		
		% cropped area during the previous period	% cropped area during the current period	% change	% cropped area during the previous period	% cropped area during the current period	% change	% cropped area during the previous period	% cropped area during the current period	% change
1	Salem	18.27	27.99	53.2	0	0	0	81.73	72.01	-11.89
2	Tirunelveli	61.79	64.4	4.24	5.69	5.93	4.22	32.52	29.67	-8.79
3	Tiruvannamalai	40.44	40.89	1.11	4.18	4.22	1.2	55.38	54.88	-0.9
<b>Tamilnadu</b>		<b>24.54</b>	<b>33.8</b>	<b>37.73</b>	<b>1.01</b>	<b>1.38</b>	<b>36.63</b>	<b>74.45</b>	<b>64.82</b>	<b>-12.93</b>

Source : Field Survey

## **5.2. Increase in Usage of Fertilizers and Improved Seeds**

This section deals with the increase in area for cultivation, increase in use of fertilizers and increase in use of improved seeds for cereals, pulses, vegetables and fruits after PMGSY road become operative in the case of sample habitations and during the period for control habitations.

### **5.2.1. Increase in Usage of Fertilizers and Improved Seeds for Cereals**

Out of 1125 sample households in Tamil Nadu no households reported an increase in area of cereals cultivation, 3.02 percent of households reported increase in use of fertilizers and 3.11 percent of households reported



increase in use of improved seeds after PMGSY road become operative. Refer Tables 5.2 & 5.2 (a).

Increase in use of fertilizers is reported by 2.67 percent of households in Salem district, 5.33 percent of households in Tirunelveli and 1.07 percent of households in Tiruvannamalai. Increase in use of improved seeds is reported by 2.93 percent of households in Salem, 4.8 percent of households in Tirunelveli and 1.6 percent of households in Tiruvannamalai.

**Table 5.2 Change in use of inputs and increase in production of Cereals in sample habitations after the PMGSY Road**

(% of households)

S.No.	District	No. of households covered	Reported increase in growing crops	Reported increase in use of fertilizers	Reported increase in use of improved seeds	Reported increase in production
1	Salem	375	0	2.67	2.93	3.47
2	Tirunelveli	375	0	5.33	4.8	20
3	Tiruvannamalai	375	0	1.07	1.6	18.13
<b>Tamilnadu</b>		<b>1125</b>	<b>0</b>	<b>3.02</b>	<b>3.11</b>	<b>13.87</b>

Source : Field Survey

In the case of control habitations in Tamil Nadu no households reported an increase in area of cereals cultivation, only 0.27 percent of households reported increase in use of fertilizers and 0.27 percent of households reported increased in use of improved seeds. Increase in use of fertilizers is reported by 0.8 percent of control households in Tiruvannamalai district. Increase in use of improved seeds is reported by 0.8 percent of control households in Salem.

**Table 5.2. (a) Change in use of inputs and increase in production of Cereals in Control habitations during the period**

(% of households)

S.No.	District	No. of control households covered	Reported increase in growing crops	Reported increase in use of fertilizers	Reported increase in use of improved seeds	Reported increase in production
1	Salem	125	0	0	0.8	1.6
2	Tirunelveli	124	0	0	0	0
3	Tiruvannamalai	125	0	0.8	0	12
<b>Tamilnadu</b>		<b>374</b>	<b>0</b>	<b>0.27</b>	<b>0.27</b>	<b>4.55</b>

Source : Field Survey

### 5.2.2. Increase in Usage of Fertilizers and Improved Seeds for Pulses

In the surveyed habitations of Tamil Nadu, no households reported increase in the area for cultivation of pulses, increase in use of fertilizers and increase in use of improved seeds. Pulses are not cultivated in the surveyed households in Salem and Tiruvannamalai districts. *Refer Tables 5.3 & 5.3 (a).*

**Table 5.3. Change in use of inputs and increase in production of Pulses in sample habitations after the PMGSY Road**

(% of households)

S.No.	District	No. of households covered	Reported increase in growing crops	Reported increase in use of fertilizers	Reported increase in use of improved seeds	Reported increase in production
1	Salem	375	0	0	0	0
2	Tirunelveli	375	0	0	0	0.8
3	Tiruvannamalai	375	0	0	0	0
<b>Tamilnadu</b>		<b>1125</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.27</b>

Source : Field Survey

In the case of control habitations, pulses are not cultivated in the surveyed households of three districts.

**Table 5.3. (a) Change in use of inputs and increase in production of Pulses in Control habitations during the period**

(% of households)

S.No.	District	No. of control households covered	Reported increase in growing crops	Reported increase in use of fertilizers	Reported increase in use of improved seeds	Reported increase in production
1	Salem	125	0	0	0	0
2	Tirunelveli	124	0	0	0	0
3	Tiruvannamalai	125	0	0	0	0
<b>Tamilnadu</b>		<b>374</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

Source : Field Survey

### 5.2.3. Increase in Usage of Fertilizers and Improved Seeds for Vegetables

In the case of vegetables in Tamil Nadu increase in area for cultivation is reported by 0.09 percent of households, increase in fertilizer usage is reported by 1.78 percent of households and increase in planting high yielding seeds is reported by 1.6 percent of households. *Refer Tables 5.4 & 5.4 (a).*

Increase in the area for vegetable cultivation is reported only in Tirunelveli district and it is 0.27 percent of households. Increase in use of fertilizers is reported by 3.2 percent of households in Salem district, 0.8 percent of households in Tirunelveli district and 1.33 percent of households in Tiruvannamalai district. Increase in use of high yielding seeds is reported by 1.87 percent of households in Salem district, 1.07 percent of households in Tirunelveli district and 1.87 percent of households in Tiruvannamalai district.

**Table 5.4 Change in use of inputs and increase in production of Vegetables in sample habitations after the PMGSY Road**

(% of households)

S.No.	District	No. of households covered	Reported increase in growing crops	Reported increase in use of fertilizers	Reported increase in use of improved seeds	Reported increase in production
1	Salem	375	0	3.2	1.87	3.73
2	Tirunelveli	375	0.27	0.8	1.07	3.47
3	Tiruvannamalai	375	0	1.33	1.87	10.4
<b>Tamilnadu</b>		<b>1125</b>	<b>0.09</b>	<b>1.78</b>	<b>1.6</b>	<b>5.87</b>

Source : Field Survey

In the case of control habitations of Tamil Nadu increase in fertilizer usage is reported by 0.53 percent of households and increase in use of improved seeds is reported by 0.8 percent of households.

Increase in use of fertilizers is reported by 1.61 percent of control households in Tirunelveli district. Increase in use high yielding seeds is

reported by 0.8 percent of control households in Salem and 1.61 percent of control households in Tirunelveli district.

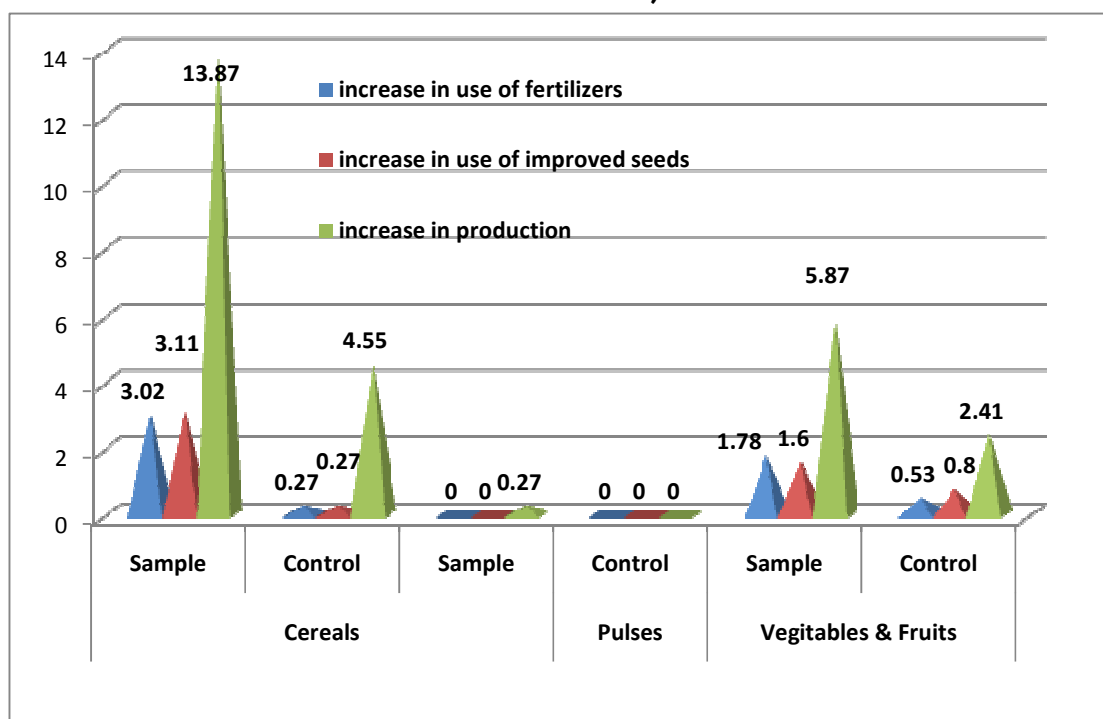
**Table 5.4. (a) Change in use of inputs and increase in production of Vegetables in control habitations during the period**

(% of households)

S.No.	District	No. of control households covered	Reported increase in growing crops	Reported increase in use of fertilizers	Reported increase in use of improved seeds	Reported increase in production
1	Salem	125	0	0	0.8	0.8
2	Tirunelveli	124	0	1.61	1.61	3.23
3	Tiruvannamalai	125	0	0	0	3.2
<b>Tamilnadu</b>		<b>374</b>	<b>0</b>	<b>0.53</b>	<b>0.8</b>	<b>2.41</b>

Source : Field Survey

**Figure 5.2: Changes in Use of Inputs and Increase in Production (% of Households)**



Source: Figure generated from Tables 5.2, 5.2 (a), 5.3, 5.3 (a) 5.4 & 5.4 (a).

### 5.3. Increased Accessibility to Markets for Agricultural Products

Due to the implementation of PMGSY, farmers get more access to markets for selling their agricultural products. The number of farmers shifted from

on- farm gate local traders to outside traders and markets have been increased after PMGSY road become operative. Out of the 1125 households surveyed in Tamil Nadu cereals are cultivated by 325 households, pulses are cultivated by only 9 households and vegetables are cultivated by 200 households. The percentage of households shifted from on-farm gate local traders to outside traders is 0.8 for cereals, 0.09 for pulses and 0.36 for vegetables. The percentage of households shifted from on-farm gate local traders to market is 1.24 for cereals and 1.42 for vegetables. The percentage of households shifted from on-farm gate outside traders to market is 0.44 for cereals and 0.62 for vegetables. *Refer Table 5.5.*

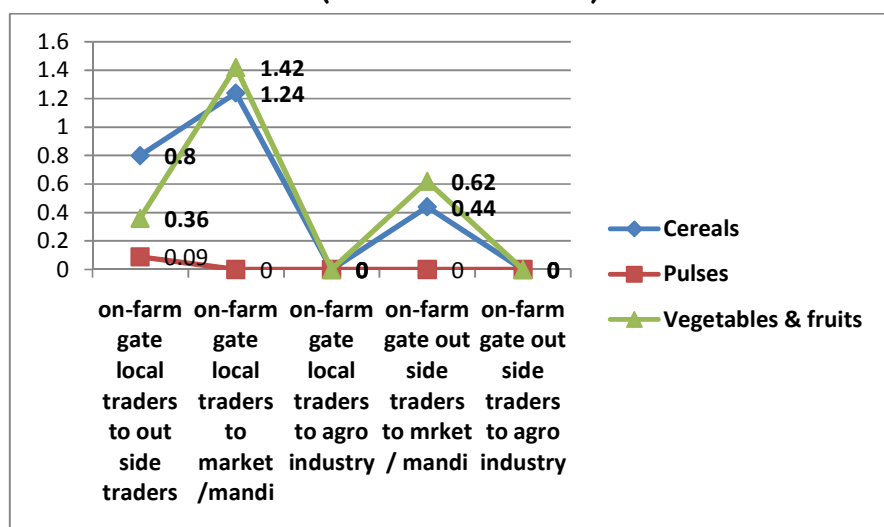
In Salem district out of the 375 households surveyed cereals are cultivated by 104 households and vegetables are cultivated by 111 households. The percentage of households shifted from on-farm gate local traders to outside traders is 0.8 for cereals and 0.27 for vegetables. The percentage of households shifted from on-farm gate local traders to market is 1.87 for cereals and 2.93 for vegetables. The percentage of households shifted from on-farm gate outside traders to market is 1.07 for cereals and 1.33 for vegetables.

In the sample households of Tirunelveli district cereals are cultivated by 132 households, pulses are cultivated by only 9 households and vegetables are cultivated by 41 households. The percentage of households shifted from on-farm gate local traders to outside traders is 1.07 for cereals, 0.27 for pulses and 0.27 for vegetables. The percentage of households shifted from on-farm gate local traders to market is 1.87 for cereals and 0.8 for vegetables. The percentage of households shifted from on-farm gate outside traders to market is 0.27 for vegetables.

In Tiruvannamalai district out of the sample households cereals are cultivated by 89 households and vegetables are cultivated by 48 households. The percentage of households shifted from on-farm gate local traders to outside traders is 0.53 for cereals and vegetables. The percentage of

households shifted from on-farm gate local traders to market is 0.53 for vegetables. The percentage of households shifted from on-farm gate outside traders to market is 0.27 for cereals and vegetables.

**Figure 5.3: Changes in Point of Sale in Sample Habitation after PMGSY (% of Households)**



Source: Figure generated from Table 5.5

**Table 5.5. Change in point of sale of production in the sample households after the PMGSY Road**

S. No.	District	No. of households covered	No. of HH growing Crop post PMGSY	(% of households)					
				Shifted from on-farm gate local traders to			Shifted from on-farm gate outside traders to		
				outside traders	market /mandi	Agro Industry	market/ mandi	Agro Industry	
1	Salem	375	Cereals	104	0.8	1.87	0	1.07	0
			Pulses	0	0	0	0	0	0
			Vegetable	111	0.27	2.93	0	1.33	0
2	Tirunelveli	375	Cereals	132	1.07	1.87	0	0	0
			Pulses	9	0.27	0	0	0	0
			Vegetable	41	0.27	0.8	0	0.27	0
3	Tiruvannamalai	375	Cereals	89	0.53	0	0	0.27	0
			Pulses	0	0	0	0	0	0
			Vegetable	48	0.53	0.53	0	0.27	0
Tamilnadu		1125	Cereals	325	0.8	1.24	0	0.44	0
			Pulses	9	0.09	0	0	0	0
			Vegetable	200	0.36	1.42	0	0.62	0

Source : Field Survey

In the case of control habitations in Tamil Nadu cereals and vegetables are cultivated by 35 control households each. The percentage of households shifted from on-farm gate local traders to market is 0.27 for cereals and 0.8 for vegetables. The percentage of households shifted from on-farm gate outside traders to market is 0.27 for vegetables. Out of the 125 control households surveyed in Salem district cereals are cultivated by 8 households and vegetables are cultivated by 11 households. In Tirunelveli district cereals are cultivated by 3 control households and vegetables are cultivated by 18 control households. The percentage of households shifted from on-farm gate local traders to market is 0.81 for cereals and 2.42 for vegetables. The percentage of households shifted from on-farm gate outside traders to market is 0.81 for vegetables. In Tiruvannamalai district cereals are cultivated by 24 control households and vegetables are cultivated by 6 control households.

**Table 5.5 (a) Change in point of sale of production in control habitations during the period**

*(% of households)*

S. No.	District	No. of households covered	No. of HH growing Crop post PMGSY		Shifted from on-farm gate local traders to			Shifted from on-farm gate out side traders to	
					outside traders	market /mandi	Agro Industry	market /mandi	Agro Industry
1	Salem	125	Cereals	8	0	0	0	0	0
			Pulses	0	0	0	0	0	0
			Vegetable	11	0	0	0	0	0
2	Tirunelveli	124	Cereals	3	0	0.81	0	0	0
			Pulses	0	0	0	0	0	0
			Vegetable	18	0	2.42	0	0.81	0
3	Tiruvannamalai	125	Cereals	24	0	0	0	0	0
			Pulses	0	0	0	0	0	0
			Vegetable	6	0	0	0	0	0
<b>Tamilnadu</b>			<b>Cereals</b>	<b>35</b>	<b>0</b>	<b>0.27</b>	<b>0</b>	<b>0</b>	<b>0</b>
			<b>Pulses</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
			<b>Vegetable</b>	<b>35</b>	<b>0</b>	<b>0.8</b>	<b>0</b>	<b>0.27</b>	<b>0</b>

Source : Field Survey

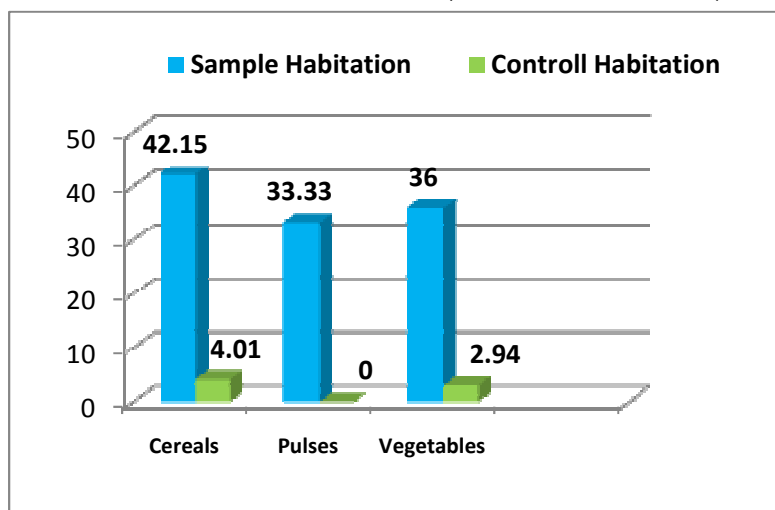
## 5.4. Increase in Agriculture Production

### 5.4.1. Cereals

In Tamil Nadu 13.87 percent of households reported increase in the production of cereals. Increase in production of cereals is reported by 3.47 percent of households in Salem, 20 percent of households in Tirunelveli and 18.13 percent of households in Tiruvannamalai. *Refer table 5.2.*

In the case of control habitation 4.55 percent of control households reported increase in the production of cereals in Tamil Nadu. Increase in production of cereals is reported by 1.6 percent of control households in Salem and 12 percent of control households in Tiruvannamalai (Refer table 5.2(a)).

**Figure 5.4: Increase in Quantity Sold in Sample and Control Habitations (% of Households)**



Source: Figure generated from Tables 5.6 & 5.6 (a)

### 5.4.2. Pulses

Only 0.27 percent of households in Tamil Nadu reported increase in production of pulses after PMGSY road become operative. Increase in production of pulses is reported by 0.8 percent of households in Tirunelveli district. Pulses are not cultivated in the surveyed households in Salem and Tiruvannamalai districts. *Refer table 5.3.*



In the case of control habitations, pulses are not cultivated in the surveyed households of three districts. *Refer table 5.3(a).*

### **5.4.3. Vegetables**

In Tamil Nadu increase in the production of vegetables is reported by 5.87 percent of households. Increase in production of vegetables is reported by 3.73 percent of households in Salem district, 3.47 percent of households in Tirunelveli district and 10.4 percent of households in Tiruvannamalai district. *Refer table 5.4.*

In control habitations of Tamil Nadu increase in production of vegetables is reported by 2.41 percent of control households. Increase in production of vegetables is reported by 0.8 percent of control households in Salem district, 3.23 percent of control households in Tirunelveli and 3.2 percent of control households in Tiruvannamalai district (Refer table 5.4(a)).

### **5.5. Increase in Prices for Agricultural Produces**

Out of the surveyed households in Tamil Nadu, the percentage of households having increase in the marketable surplus is 42.15 for cereals, 33.33 for pulses and 36 for vegetables. Increase in average realized price is reported by 20.92 percent of households for cereals and 34.5 percent of households for vegetables. No household reported increase in average realized price for pulses.

In Salem district increase in the marketable surplus is reported by 9.62 percent of households for cereals and 15.32 percent of households for vegetables. Increase in average realized price is reported by 23.08 percent of households for cereals and 36.94 percent of households for vegetables. In Tirunelveli district increase in the marketable surplus is reported by 46.21 percent of households for cereals, 33.33 percent of household for pulses and 39.02 percent of households for vegetables. Increase in average realized price is reported by 11.36 percent of households for cereals and 17.07 percent of households for vegetables. In Tiruvannamalai district increase in the marketable surplus is reported by 74.16 percent of households for

cereals and 81.25 percent of households for vegetables. Increase in average realized price is reported by 32.58 percent of households for cereals and 43.75 percent of households for vegetables.

**Table 5.6. Change in quantity sold and realized price in the sample households after the PMGSY Road**

*(% of households)*

S.No.	District	No. of households covered	No. of HH growing Crop post PMGSY		Reported increase in marketable surplus	Reported increase in average realized price
1	Salem	375	Cereals	104	9.62	23.08
			Pulses	0	0	0
			Vegetable	111	15.32	36.94
2	Tirunelveli	375	Cereals	132	46.21	11.36
			Pulses	9	33.33	0
			Vegetable	41	39.02	17.07
3	Tiruvannamalai	375	Cereals	89	74.16	32.58
			Pulses	0	0	0
			Vegetable	48	81.25	43.75
<b>Tamilnadu</b>		<b>1125</b>	<b>Cereals</b>	<b>325</b>	<b>42.15</b>	<b>20.92</b>
			<b>Pulses</b>	<b>9</b>	<b>33.33</b>	<b>0</b>
			<b>Vegetable</b>	<b>200</b>	<b>36</b>	<b>34.5</b>

Source : Field Survey

In the case of control habitations increase in the marketable surplus is reported by 4.01 percent of control households for cereals and 2.94 percent of control households for vegetables. Increase in average realized price is reported by 5.71 percent of control households for cereals and 22.86 percent of control households for vegetables. In Salem district increase in the marketable surplus is reported by 0.8 percent of control households for cereals and vegetables. But no households reported increase in average realized price. In Tirunelveli district increase in the marketable surplus is reported by 4.84 percent of control households for vegetables. Increase in average realized price is reported by 33.33 percent of control households for cereals and 38.89 percent of control households for vegetables. In Tiruvannamalai district increase in the marketable surplus is reported by 11.2 percent of control households for cereals and 3.2 percent of control households for vegetables. Increase in average realized price is reported by 4.17 percent of control households for cereals and 16.67 percent of control households for vegetables.

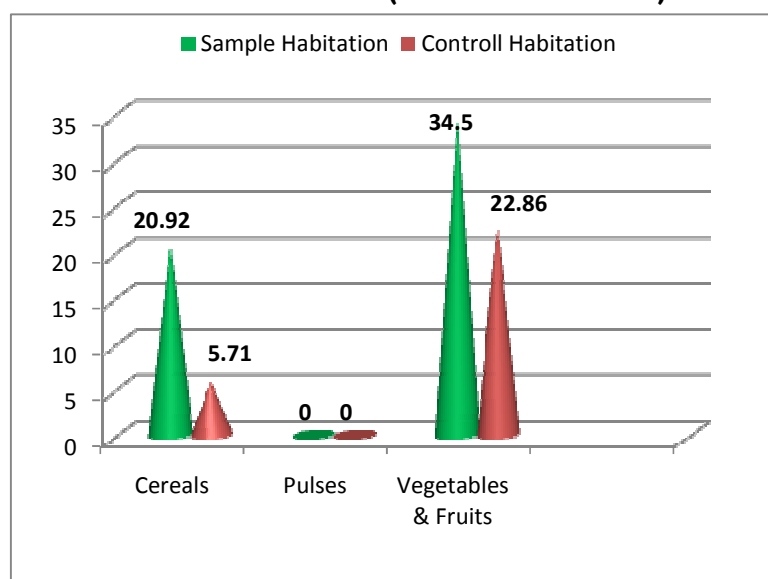
**Table 5.6 (a) Change in quantity sold and realized price in the control households during the period**

(% of households)

S.No.	District	No. of households covered	No. of HH growing Crop post PMGSY		Reported increase in marketable surplus	Reported increase in average realized price
1	Salem	125	Cereals	8	0.8	0
			Pulses	0	0	0
			Vegetable	11	0.8	0
2	Tirunelveli	124	Cereals	3	0	33.33
			Pulses	0	0	0
			Vegetable	18	4.84	38.89
3	Tiruvannamalai	125	Cereals	24	11.2	4.17
			Pulses	0	0	0
			Vegetable	6	3.2	16.67
<b>Tamilnadu</b>		<b>374</b>	Cereals	35	4.01	5.71
			Pulses	0	0	0
			Vegetable	35	2.94	22.86

Source : Field Survey

**Figure 5.5: Increase in Average Realized Price in Sample and Control Habitations (% of Households)**



Source: Figure generated from Tables 5.6 & 5.6 (a)

## **5.6. Changes in Access to Facilities/Services by Farmers**

### **5.6.1. Changes in Access to Facilities/Services by Farmers in Sample Habitation**

Out of the 1125 surveyed households in Tamil Nadu only 416 households have own agricultural land. After the implementation of PMGSY, the

households shifted to nearby market outside habitation to buy fertilizers and pesticides is 4.57 percent and the households shifted to distant market outside habitation to buy fertilizers and pesticides is 0.96 percent. The percentage of households shifted to nearby market outside habitation to buy improved seeds is 3.85 and the households shifted to distant market outside habitation to buy improved seeds is 0.72 percent. After PMGSY road become operative 7.21 percent of households acquired membership from farmers cooperative society, 12.26 percent of households have bank account, 5.29 percent of households got agricultural loan and 24.32 percent of households got an increase in the loan amount. It is noted that 2.4 percent of households reported an increase in the number of visits by agriculture extension workers.

Number of sample households having own agricultural land is 161 in Salem district, 145 in Tirunelveli district and 110 in Tiruvannamalai district. After the implementation of PMGSY, the households shifted to nearby market outside habitation to buy fertilizers and pesticides is 1.24 percent in Salem district, 4.14 percent in Tirunelveli and 10 percent in Tiruvannamalai. Households shifted to distant market outside habitation to buy fertilizers and pesticides are 0.62 percent in Salem, 0.69 percent in Tirunelveli and 1.82 percent in Tiruvannamalai. Households shifted to nearby market outside habitation to buy improved seeds are 0.62 percent in Salem, 2.07 percent in Tirunelveli and 10.91 percent in Tiruvannamalai. Households shifted to distant market outside habitation to buy improved seeds are 0.69 percent in Tirunelveli and 1.82 percent in Tiruvannamalai. After PMGSY road become operative percentage of households acquired membership from farmers cooperative society is 12.42 in Salem and 9.09 in Tiruvannamalai. Sample households having bank account is 14.91 percent in Salem, 14.48 percent in Tirunelveli and 5.45 percent in Tiruvannamalai. Percentage of household got agriculture loan is 6.83 in Salem and 7.59 in Tirunelveli. There is an increase in the loan amount for 57.14 percent of households in Salem and 11.11 percent of households in Tirunelveli. It is reported an increase in the number of visit by agriculture extension workers by 3.11

percent of households in Salem and 3.45 percent of households in Tirunelveli. Refer table A.5 in Appendix.

### **5.6.2. Changes in Access to Facilities/Services by Farmers in Control Habitation**

Out of the 324 control households surveyed in Tamil Nadu only 62 households have own agricultural land. Control households shifted to distant market outside habitation to buy fertilizers and pesticides is 3.23 percent and to buy improved seeds it is 1.61 percent. During the period 1.61 percent of households acquired membership from farmers cooperative society, 1.61 percent of households have bank account and 4.84 percent of households got agricultural loan in Tamil Nadu.

Number of control households having own agricultural land is 16 in Salem, 20 in Tirunelveli and 26 in Tiruvannamalai. Control households shifted to distant market outside habitation to buy fertilizers and pesticides is 7.69 percent and to buy improved seeds it is 3.85 percent in Tiruvannamalai district. During the period 6.25 percent of households acquired membership from farmers cooperative society, 6.25 percent of households have bank account and 12.5 percent of households got agricultural loan in Salem district. Other two districts have no change in access to the facilities during the period. Refer table A.6 in Appendix.

### **5.7. Increase in Ownership of Assets Related to Agriculture**

After PMGSY road become operative in Tamil Nadu, tractor is owned by 17 sample households, power tiller in 9 households, thrasher in 2 households, water lifting pump set in 84 households, other farm machinery in 14 households, cows/buffaloes in 194 households, goat/sheep/pigs in 108 households, horse/mule/camel in 5 households and poultry birds in 75 households. The households reported increase in the number of assets is 41.18 percent for tractor, 50 percent for thrasher, 11.9 percent for water lifting pump set, 35.71 percent for other farm machinery, 43.81 percent for cows/buffaloes, 53.71 percent for goat/sheep/pigs, 20 percent for horse/mule/camel and 53.33 percent for poultry birds. Table 5.7 gives the district wise details of assets and percentage of household reported increase in the number of assets after PMGSY road become operative.

**Table 5.7 Changes in ownership of assets related to agriculture in the sample households after the PMGSY Road**

					(% of households)
S.No.	District	No. of households covered	No. of HH reported ownership of assets		Reported increase in numbers or acquired assets
1	Salem	375	Tractor	3	33.33
			Power Tiller	5	0
			Thrasher	0	0
			Water Lifting Pump Set	32	12.5
			Other Farm Machinery	9	33.33
			Cows/ Buffaloes	88	39.77
			Goat/ Sheep/ Pigs	59	49.15
			Horse/ Mule/ Camel	2	50
			Poultry Birds	29	44.83
2	Tirunelveli	375	Tractor	12	41.67
			Power Tiller	4	0
			Thrasher	2	50
			Water Lifting Pump Set	21	19.05
			Other Farm Machinery	3	33.33
			Cows/ Buffaloes	47	72.34
			Goat/ Sheep/ Pigs	27	85.19
			Horse/ Mule/ Camel	2	0
			Poultry Birds	33	63.64
3	Tiruvannamalai	375	Tractor	2	50
			Power Tiller	0	0
			Thrasher	0	0
			Water Lifting Pump Set	31	6.45
			Other Farm Machinery	2	50
			Cows/ Buffaloes	59	27.12
			Goat/ Sheep/ Pigs	22	27.27
			Horse/ Mule/ Camel	1	0
			Poultry Birds	13	46.15
Tamilnadu		1125	Tractor	17	41.18
			Power Tiller	9	0
			Thrasher	2	50
			Water Lifting Pump Set	84	11.9
			Other Farm Machinery	14	35.71
			Cows/ Buffaloes	194	43.81
			Goat/ Sheep/ Pigs	108	53.7
			Horse/ Mule/ Camel	5	20
			Poultry Birds	75	53.33

Source : Field Survey

In the case of control habitation in Tamil Nadu, tractor is owned by 4 control households, power tiller in 1 household, thrasher in 2 households, water lifting pump set in 14 households, other farm machinery in 4 households, cows/buffaloes in 29 households, goat/sheep/pigs in 17 households, and

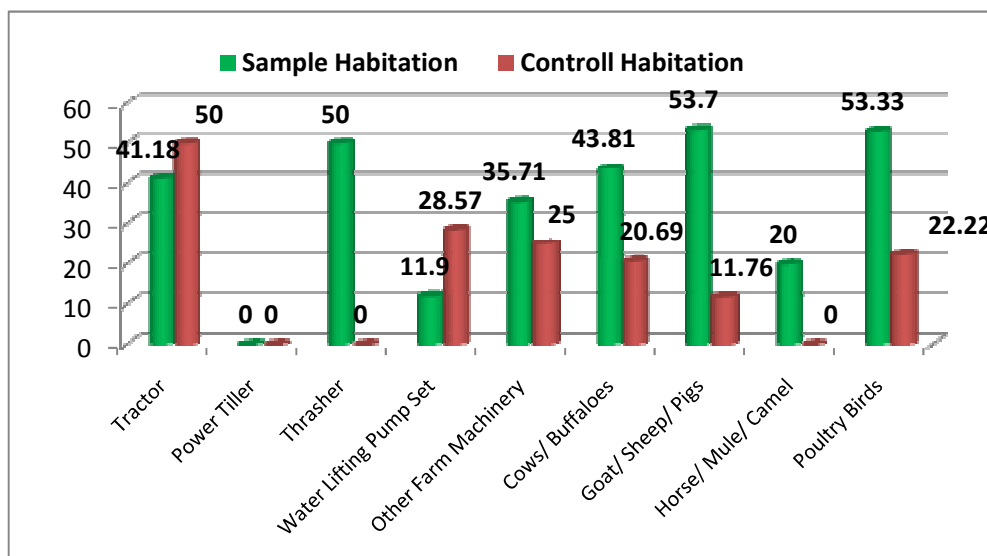
poultry birds in 9 households. The households reported increase in the number of assets is 50 percent for tractor, 28.57 percent for water lifting pump set, 25 percent for other farm machinery, 20.69 percent for cows/buffaloes, 11.76 percent for goat/sheep/pigs and 22.22 percent for poultry birds. Table 5.7(a) gives the district wise details of assets and percentage of household reported increase in the number of assets during the period in the control habitation.

**Table 5.7 (a) Changes in ownership of assets related to agriculture in the control households during the period**

S.No.	District	No. of households covered	No. of HH reported ownership of assets		% HH reported increase in numbers or acquired assets during the current period
1	Salem	125	Tractor	0	0
			Power Tiller	0	0
			Thrasher	1	0
			Water Lifting Pump Set	4	25
			Other Farm Machinery	2	50
			Cows/ Buffaloes	10	10
			Goat/ Sheep/ Pigs	9	11.11
			Horse/ Mule/ Camel	0	0
			Poultry Birds	1	0
2	Tirunelveli	124	Tractor	4	50
			Power Tiller	1	0
			Thrasher	1	0
			Water Lifting Pump Set	5	40
			Other Farm Machinery	2	0
			Cows/ Buffaloes	11	36.36
			Goat/ Sheep/ Pigs	5	20
			Horse/ Mule/ Camel	0	0
			Poultry Birds	4	25
3	Tiruvannamalai	125	Tractor	0	0
			Power Tiller	0	0
			Thrasher	0	0
			Water Lifting Pump Set	5	20
			Other Farm Machinery	0	0
			Cows/ Buffaloes	8	12.5
			Goat/ Sheep/ Pigs	3	0
			Horse/ Mule/ Camel	0	0
			Poultry Birds	4	25
	Tamilnadu	374	<b>Tractor</b>	<b>4</b>	<b>50</b>
			<b>Power Tiller</b>	<b>1</b>	<b>0</b>
			<b>Thrasher</b>	<b>2</b>	<b>0</b>
			<b>Water Lifting Pump Set</b>	<b>14</b>	<b>28.57</b>
			<b>Other Farm Machinery</b>	<b>4</b>	<b>25</b>
			<b>Cows/ Buffaloes</b>	<b>29</b>	<b>20.69</b>
			<b>Goat/ Sheep/ Pigs</b>	<b>17</b>	<b>11.76</b>
			<b>Horse/ Mule/ Camel</b>	<b>0</b>	<b>0</b>
			<b>Poultry Birds</b>	<b>9</b>	<b>22.22</b>

Source : Field Survey

**Figure 5.6: Increase in Acquired Assets in Sample and Control Habitations (% of Households)**



Source: Figure generated from Tables 5.7 & 5.7 (a)



## **Chapter 6**

### **Impact on Employment Generation**

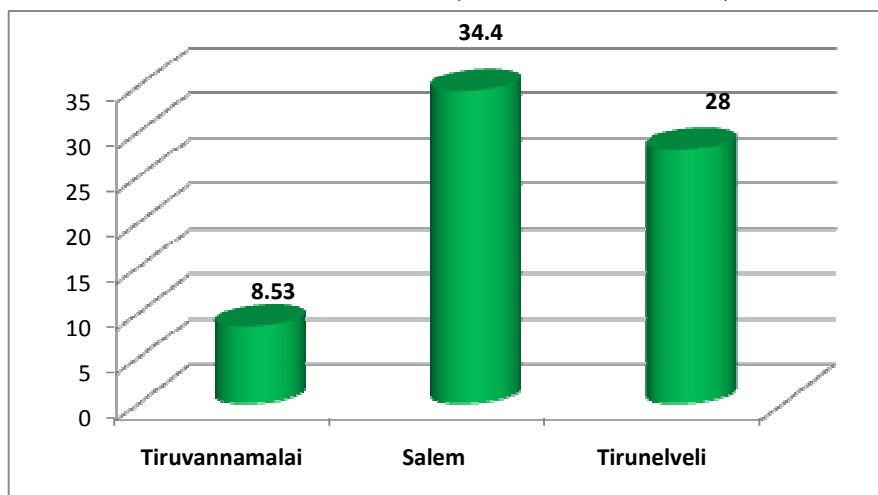
#### **6.1. Increase in Number of Days Employed**

##### **6.1.1. Increase in Number of Days Employed for Sample Habitations**

Household heads were asked whether work opportunities have increased after PMGSY road was laid. In Tamil Nadu 23.47 percent of the households reported improved employment opportunities in their main occupations. And 0.36 percent of households reported improvement in other occupations and it is an increase up to 50 days. In the case of main occupations 17.33 percent of households reported increase in the number of days of employment up to 50 days, 3.64 percent of households reported 51-100 days, 1.33 percent of households reported 101-150 days, 0.71 percent of households reported 151-200 days and 0.44 percent of households reported above 200 days. However there was no apparent increase in the number of people taking up other occupations. Households reported increase in total days of employment is 23.64 percent in Tamil Nadu. *Refer table A.7 in Appendix.*

It is identified that 34.13 percent of households in Salem, 27.73 percent of households in Tirunelveli and 8.53 percent of households in Tiruvannamalai reported improved employment opportunities in their main occupations. Households reported improved employment opportunities in other occupation are 0.27 percent in Salem and 0.8 percent in Tirunelveli. In Salem district 34.4 percent of households, in Tirunelveli 28 percent of households and in Tiruvannamalai 8.53 percent of households reported increase in total days of employment.

**Figure 6.1: Increase in the Number of Total Days Employed in Sample Habitation (% of Households)**



Source: Figure generated from Table 6.1

**Table 6.1. Increase in employment opportunities for sample households Before and After PMGSY Road**

*(% of Households)*

S.No.	District	No. of HH Covered	Reported increase in no. of days of employment in principal occupation	Reported increase in no. of days of employment in other occupation	Reported more members taking up other occupations	Reported increase in total days employed
1	Salem	375	34.13	0.27	0	34.4
2	Tirunelveli	375	27.73	0.8	0	28
3	Tiruvannamalai	375	8.53	0	0	8.53
<b>Tamilnadu</b>		<b>1125</b>	<b>23.47</b>	<b>0.36</b>	<b>0</b>	<b>23.64</b>

Source : Field Survey

### **6.1.2. Increase in Number of Days Employed for Control Habitations**

In the case of control habitations in Tamil Nadu, 20.59 percent of control households reported improved employment opportunities in their main occupations. In the case of main occupations 13.64 percent of households reported increase in the number of days of employment up to 50 days, 5.61 percent of households reported 51-100 days, 0.53 percent of households reported 101-150 days, 0.53 percent of households reported 151-200 days

and 0.27 percent of households reported above 200 days. No control households reported improved employment opportunities in other occupations and increase in the number of people taking up other occupations. Therefore increase in total days of employment is reported by 20.59 percent of households itself. *Refer table A.8 in Appendix.*

In the control habitations 6.4 percent of households in Salem, 50.81 percent of households in Tirunelveli and 4.8 percent of households in Tiruvannamalai reported improved employment opportunities in their main occupations and it is also same for the increase in the total days of employment.

**Table 6.1(a) Increase in employment opportunities for control households during the period**

*(% of households)*

S.No.	District	No. of control HH Covered	Reported increase in no. of days of employment in principal occupation	Reported increase in no. of days of employment in other occupation	Reported more members taking up other occupations	Reported increase in total days employed
1	Salem	125	6.4	0	0	6.4
2	Tirunelveli	124	50.81	0	0	50.81
3	Tiruvannamalai	125	4.8	0	0	4.8
<b>Tamilnadu</b>		<b>374</b>	<b>20.59</b>	<b>0</b>	<b>0</b>	<b>20.59</b>

Source : Field Survey

## **6.2. Changes in Travel to Place of Employment**

### **6.2.1. Changes in Travel to Place of Employment for Sample Habitations**

After PMGSY road become operative in the surveyed habitations of Tamil Nadu 1.87 percent of households (members) shifted place of employment, 1.07 percent reported reduction in the distance traveled to their place of work, 8.27 percent reported reduction in travel time and 0.53 percent depends on motor vehicles to travel to their working place. *Refer Table 6.2.*

Households shifted place of employment is 2.4 percent in Salem district, 2.93 percent in Tirunelveli district and 0.27 percent in Tiruvannamalai

district. Reduction in the distance traveled to working place is reported by 0.53 percent of households in Salem district, 0.8 percent of households in Tirunelveli district and 1.87 percent of households in Tiruvannamalai district. Reduction in the travel time to working place is reported by 3.73 percent of households in Salem district, 18.93 percent of households in Tirunelveli district and 2.13 percent of households in Tiruvannamalai district. Households depend on motor vehicles to travel to their working place is 1.07 percent in Salem district and 0.53 percent in Tirunelveli district.

**Table 6.2. Change in travel to place of employment (Principal Occupation) for members of sample households Post PMGSY**

*(% of HH where members)*

S.No.	District	No. of HH Covered	Shifted place of employment outside the habitation	Reported reduction of distance travelled	Reported reduction in travel time	Reported shifting to motorized transport for commuting to place of work
1	Salem	375	2.4	0.53	3.73	1.07
2	Tirunelveli	375	2.93	0.8	18.93	0.53
3	Tiruvannamalai	375	0.27	1.87	2.13	0
<b>Tamilnadu</b>		<b>1125</b>	<b>1.87</b>	<b>1.07</b>	<b>8.27</b>	<b>0.53</b>

Source : Field Survey

### **6.2.2. Changes in Travel to Place of Employment for Control Habitations**

During the period in the control habitations of Tamil Nadu 1.34 percent of control households (members) shifted place of employment, 0.53 percent reported reduction in the distance traveled to their place of work, 4.81 percent reported reduction in travel time and 0.53 percent depends on motor vehicles to travel to their working place. *Refer Table 6.2 (a).*

Households shifted place of employment is 4.03 percent in Tirunelveli district and zero in Salem and Tiruvannamalai districts. Reduction in the distance traveled to working place is reported by 1.6 percent of households in Tiruvannamalai district and zero for Salem and Tirunelveli districts. Reduction in the travel time to working place is reported by 0.8 percent of

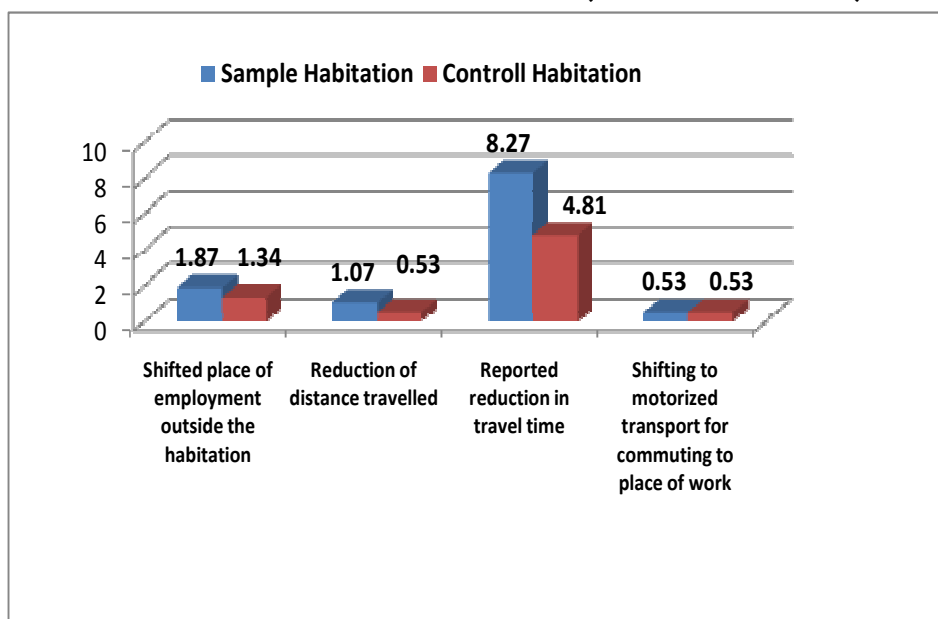
households in Salem district, 11.29 percent of households in Tirunelveli district and 2.4 percent of households in Tiruvannamalai district. Households depend on motor vehicles to travel to their working place is 1.6 percent in Tiruvannamalai district and zero for other two districts.

**Table 6.2 (a). Change in travel to place of employment (Principal Occupation) for members of control households during the period**

S.No.	District	No. of control HH Covered	% of HH where members shifted place of employment outside the habitation	% of HH where members reported reduction of distance travelled	% of HH where members reported reduction in travel time	% of HH where members reported shifting to motorized transport for commuting to place of work
1	Salem	125	0	0	0.8	0
2	Tirunelveli	124	4.03	0	11.29	0
3	Tiruvannamalai	125	0	1.6	2.4	1.6
<b>Tamilnadu</b>		<b>374</b>	<b>1.34</b>	<b>0.53</b>	<b>4.81</b>	<b>0.53</b>

Source : Field Survey

**Figure 6.2: Changes in Travel to Place of Employment in Sample and Control Habitations (% of Households)**



Source: Figure generated from Tables 6.2 & 6.2 (a)

### 6.3. Changes in Occupational Pattern

#### 6.3.1. Changes in Occupational Pattern in the Sample Habitations

After PMGSY road become operative in Tamil Nadu 5.51 percent of households change their occupations. It is noted that 0.36 percent of households shifted to trading/shop keeping, 3.56 percent of households shifted to driver/service in the transport sector and 0.44 percent shifted to private services. *Refer Table 6.3.*

Members of the households change their occupations after PMGSY is 10.13 percent in Salem district, 4.53 percent in Tirunelveli district and 1.87 percent in Tiruvannamalai district. Households shifted to trading /shop keeping is 0.8 percent in Salem district and 0.27 percent in Tirunelveli district. Households shifted to driver/service in the transport sector are 6.67 percent in Salem district, 2.67 percent in Tirunelveli district and 1.33 percent in Tiruvannamalai district. Members of the households shifted to private service are 0.8 percent in Salem district, 0.27 percent in Tirunelveli and Tiruvannamalai districts.

**Table 6.3 Change in Principal occupation of sample households after PMGSY Road**

<i>(% of households)</i>				
S.No.	District	No. of HH Covered	Reported change in occupation	Reported no change in occupation
1	Salem	375	10.13	89.87
2	Tirunelveli	375	4.53	95.47
3	Tiruvannamalai	375	1.87	98.13
<b>Tamilnadu</b>		<b>1125</b>	<b>5.51</b>	<b>94.49</b>

Source : Field Survey

#### 6.3.2. Changes in Occupational Pattern in the Control Habitations

In the case of control habitations in Tamil Nadu 3.74 percent of households change their occupation. It is identified that 0.27 percent of households shifted to trading/shop keeping and 4.01 percent of households shifted to driver/service in the transport sector. *Refer Table 6.3 (a).*

Control households change their occupation during the period is 1.6 percent in Salem district, 4.03 percent in Tirunelveli district and 5.6 percent in Tiruvannamalai district. Control household members shifted to

trading/shop keeping is 0.8 percent in Tiruvannamalai district. Control household members shifted to driver/service in the transport sector are 4 percent in Salem district, 6.45 percent in Tirunelveli district and 1.6 percent in Tiruvannamalai district.

**Table 6.3 (a) Change in Principal occupation of households ( control)  
during the period**

*(% of households)*

S.No.	District	No. of Control HH Covered	Reported change in occupation	Reported no change in occupation
1	Salem	125	1.6	98.4
2	Tirunelveli	124	4.03	95.97
3	Tiruvannamalai	125	5.6	94.4
<b>Tamilnadu</b>		<b>374</b>	<b>3.74</b>	<b>96.26</b>

Source : Field Survey

**Table 6.4. Change in occupational pattern of members of sample households  
after PMGSY Road**

*(% of Households)*

S.No.	District	No. of HH Covered	Where members shifted to trading/shop keeping	Where members shifted to driver/service in transport sector	Where members shifted to Government Services	Where members shifted to Private Services
1	Salem	375	0.8	6.67	0	0.8
2	Tirunelveli	375	0.27	2.67	0	0.27
3	Tiruvannamalai	375	0	1.33	0	0.27
<b>Tamilnadu</b>		<b>1125</b>	<b>0.36</b>	<b>3.56</b>	<b>0</b>	<b>0.44</b>

Source : Field Survey

**Table 6.4 (a) Change in occupational pattern of members of control households  
during the period**

*(% of Households)*

S.No.	District	No. of HH Covered	Where members shifted to trading/shop keeping	Where members shifted to driver/service in transport sector	Where members shifted to Government Services	Where members shifted to Private Services
1	Salem	125	0	4	0	0
2	Tirunelveli	124	0	6.45	0	0
3	Tiruvannamalai	125	0.8	1.6	0	0
<b>Tamilnadu</b>		<b>374</b>	<b>0.27</b>	<b>4.01</b>	<b>0</b>	<b>0</b>

Source : Field Survey

## **Chapter 7**

### **Impact on Income and Poverty Alleviation**

#### **7.1. Increase in Income of Households**

This part describes the changes occurred in the income of the sample households after the implementation of PMGSY road.

##### **7.1.1. Increase in Income in the Agricultural Activities**

Number of sample households engaged in agricultural activities is 416 in Tamil Nadu. After laying PMGSY road 26.68 percent of the households reported increase in income from agricultural activities. Out of that 33.33 percent of households reported increase in the income up to 10 percent, 21.62 percent reported an increase in the range of 11-25 percent, 9.91 percent reported an increase in the range of 26-50 percent and 35.14 percent reported and increase of more than 50 percent. *Refer Table 7.1.*

Number of sample households engaged in agricultural activities is 161 in Salem district, 145 in Tirunelveli district and 110 in Tiruvannamalai district. Increase in income from agricultural activities is reported by 32.3 percent of households in Salem district, 13.79 percent in Tirunelveli district and 35.45 percent in Tiruvannamalai district after laying PMGSY road. Out of the increase an increase in income up to 10 percent is reported by 42.31 percent of households in Salem district, 50 percent of households in Tirunelveli district and 12.82 percent of households in Tiruvannamalai district. Increase in the income in the range 11-25 percent is reported by 36.54 percent of households in Salem district and 25 percent of households in Tirunelveli district. Increase in the income in the range 26-50 percent is reported by 11.54 percent of households in Salem district, 15 percent of households in Tirunelveli district and 5.13 percent of households in Tiruvannamalai district. More than 50 percent increase in income is reported by 9.62 percent of households in Salem district, 10 percent of households in Tirunelveli district and 82.05 percent of households in Tiruvannamalai district.



**Table 7.1 Increase in income in the agricultural activities of sample households after PMGSY road**

(% of households)

S. No.	District	Households Covered	No. of Households engaged in agricultural activities	reported increase in income in agricultural activities	reported increase in income in agricultural activities			
					upto 10%	11% to 25%	26% to 50%	more than 50%
1	Salem	375	161	32.3	42.31	36.54	11.54	9.62
2	Tirunelveli	375	145	13.79	50	25	15	10
3	Tiruvannamalai	375	110	35.45	12.82	0	5.13	82.05
<b>Tamilnadu</b>		<b>1125</b>	<b>416</b>	<b>26.68</b>	<b>33.33</b>	<b>21.62</b>	<b>9.91</b>	<b>35.14</b>

Source : Field Survey

In the case of control habitations in Tamil Nadu number of control households engaged in agricultural activities are 62. Increase in income from agricultural activities is reported by 14.52 percent of control households. Out of that 44.44 percent of control households reported increase in the income up to 10 percent, 33.33 percent reported an increase in the range of 11-25 percent and 22.22 percent reported an increase of more than 50 percent. *Refer Table 7.1 (a).*

Number of control households engaged in agricultural activities is 16 in Salem district, 20 in Tirunelveli district and 26 in Tiruvannamalai district. Increase in income from agricultural activities is reported by 6.25 percent of control households in Salem district, 30 percent in Tirunelveli district and 7.69 percent in Tiruvannamalai district.

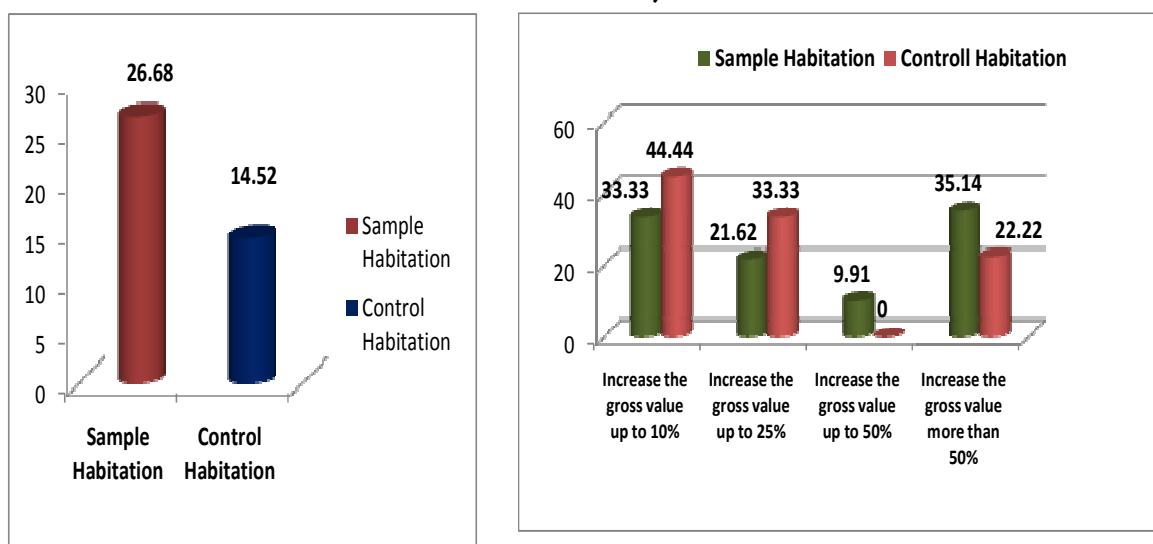
**Table 7.1 (a) Increase in income in the agricultural activities of control households during the period**

(% of households)

S.No.	District	Control Households Covered	No. of Households engaged in agricultural activities	reported increase in income in agricultural activities	reported increase in income in agricultural activities			
					upto 10%	11% to 25%	26% to 50%	more than 50%
1	Salem	125	16	6.25	0	100	0	0
2	Tirunelveli	124	20	30	66.67	33.33	0	0
3	Tiruvannamalai	125	26	7.69	0	0	0	100
<b>Tamilnadu</b>		<b>374</b>	<b>62</b>	<b>14.52</b>	<b>44.44</b>	<b>33.33</b>	<b>0</b>	<b>22.22</b>

Source : Field Survey

**Figure 7.1: Increase in Income in Agricultural Activities (% of Households)**



Source: Figures generated from Tables 7.1 & 7.1 (a)

### 7.1.2. Increase in Income by Occupations

In the sample households of Tamil Nadu, increase in average annual income due to principal occupation is reported by 41.42 percent of households and increase in average annual income due to other occupation is reported by only 0.8 percent of households. It is noted that 9.16 percent of households reported increase in total average annual income due to all occupations up to 10 percent, 25.07 percent reported an increase in the range of 11-35 percent, 3.2 percent reported an increase in the range of 36-50 percent and 4.36 percent reported an increase of more than 50 percent after PMGSY road become operative. *Refer Table 7.2.*

After laying PMGSY road, increase in average annual income from principle occupation is reported by 40 percent of households in Salem district, 58.13 percent in Tirunelveli district and 26.13 percent in Tiruvannamalai district. Increase in average annual income from other occupation is reported by 0.8 percent of households in Salem district, 1.07 percent in Tirunelveli district and 0.53 percent in Tiruvannamalai district. Increase in total average annual income from all occupation up to 10 percent is reported by 13.07

percent of households in Salem district, 5.07 percent of households in Tirunelveli district and 9.33 percent of households in Tiruvannamalai district. Increase in the income in the range 11-35 percent is reported by 18.4 percent of households in Salem district, 41.6 percent of households in Tirunelveli district and 15.2 percent of households in Tiruvannamalai district. Increase in the income in the range 36-50 percent is reported by 3.73 percent of households in Salem district and 5.87 percent of households in Tirunelveli district. More than 50 percent increase in income is reported by 5.33 percent of households in Salem district, 5.87 percent of households in Tirunelveli district and 1.87 percent of households in Tiruvannamalai district.

**Table 7.2. Increase in average annual income of sample households Post PMGSY**

(% of households)

S. No.	District	No. of HH Covered	Reported increase in average annual income in principal occupation	Reported increase in average annual income in other occupation	Reported increase in total average annual income in all occupations	increase in total average annual income in all occupations			
						upto 10%	11 to 35%	36 to 50%	more than 50%
1	Salem	375	40	0.8	40.53	13.07	18.4	3.73	5.33
2	Tirunelveli	375	58.13	1.07	58.4	5.07	41.6	5.87	5.87
3	Tiruvannamalai	375	26.13	0.53	26.4	9.33	15.2	0	1.87
<b>Tamilnadu</b>		<b>1125</b>	<b>41.42</b>	<b>0.8</b>	<b>41.78</b>	<b>9.16</b>	<b>25.07</b>	<b>3.2</b>	<b>4.36</b>

Source : Field Survey

In the control habitations of Tamil Nadu, increase in average annual income is only due to principal occupation and is reported by 32.89 percent of control households. It is noted that 7.22 percent of control households reported increase in total average annual income due to all occupations up to 10 percent, 20.59 percent reported an increase in the range of 11-35 percent, 2.41 percent reported an increase in the range of 36-50 percent and 2.67 percent reported an increase of more than 50 percent after PMGSY road become operative. *Refer Table 7.2 (a).*

Increase in average annual income due to principal occupation is reported by 11.2 percent of control households in Salem district, 71.77 percent of

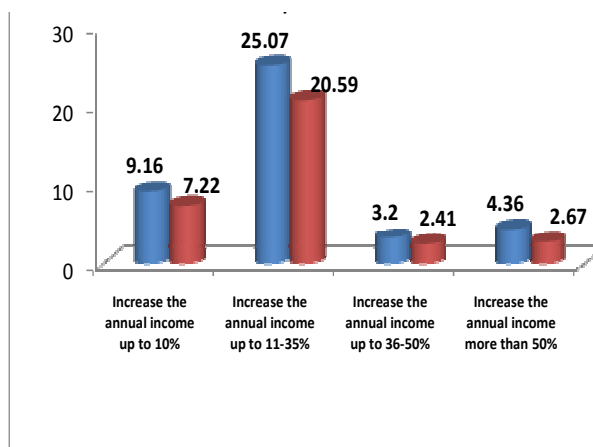
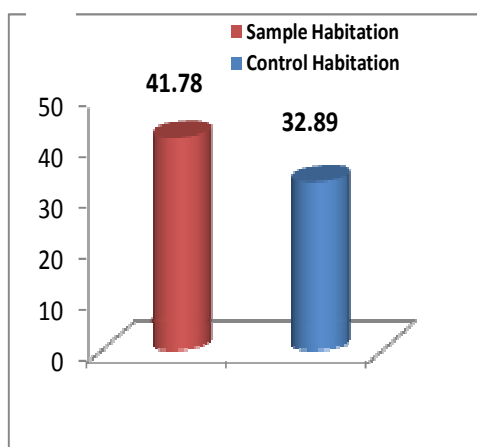
control households in Tirunelveli district and 16 percent of control households in Tiruvannamalai district.

**Table 7.2. (a) Increase in average annual income of control households during the period**

S.No.	District	No. of control HH Covered	Reported increase in average annual income in principal occupation	Reported increase in average annual income in other occupation	Reported increase in total average annual income in all occupations	Increase in total average annual income in all occupations (% of households)			
						upto 10%	11 to 35%	36 to 50%	more than 50%
1	Salem	125	11.2	0	11.2	2.4	8	0	0.8
2	Tirunelveli	124	71.77	0	71.77	8.06	50.81	7.26	5.65
3	Tiruvannamalai	125	16	0	16	11.2	3.2	0	1.6
<b>Tamilnadu</b>		<b>374</b>	<b>32.89</b>	<b>0</b>	<b>32.89</b>	<b>7.22</b>	<b>20.59</b>	<b>2.41</b>	<b>2.67</b>

Source : Field Survey

**Figure 7.2: Increase in Average Annual Income in all Occupations (% of Households)**



Source: Figures generated from Tables 7.2 & 7.2 (a)

### 7.1.3. Increase in Income levels of Sample Habitations

In the sample habitations of Tamil Nadu income level of the people is increased in 88.89 percent of habitations after PMGSY road become operative. This increase is due to multiple reasons. Farmers in 87.5 percent of habitations reported increase in the income level due to increase in crop yield and fetching better prices. Wage labourers in 75 percent of the habitations reported increase in the income level due to increase in labour

rates. Persons engaged in livestock/poultry business in 60 percent of the habitations reported increase in the income level due to better access to markets. Persons engaged in business/ trading/running shops in 57.5 percent of habitations reported increase in the income level due to better connectivity.

Income level of the people is increased in 66.67 percent of sample habitations in Salem district, cent percent of habitations in Tirunelveli and Tiruvannamalai districts. Farmers in reported increase in the income level is due to increase in crop yield and fetching better prices in cent percent of habitations in Tiruvannamalai district and 80 percent of habitations in Salem and Tirunelveli districts. Wage labourers reported increase in the income level is due to increase in labour rates in 60 percent of habitations in Salem, 80 percent of habitations in Tirunelveli and Tiruvannamalai districts. Persons engaged in livestock/poultry business reported increase in the income level is due to better access to markets in 50 percent of habitations in Salem district, 53.33 percent of habitations in Tirunelveli district and 73.33 percent of habitations in Tiruvannamalai district. Persons engaged in business/ trading/running shops reported increase in the income level is due to better connectivity in 40 percent of habitations in Salem district, 53.33 percent of habitations in Tirunelveli district and 73.33 percent of habitations in Tiruvannamalai district. *Refer Table 7.3.*

**Table 7.3 Increase in the income levels of people in sample habitations After PMGSY Road**

(% of habitations)

S.No.	District	Habitations Covered	Increase in the income levels of people	it has been in case of			
				The farmers due to increase in crop yield and fetching better prices	The wage labourers due to increase in labour rates	The persons engaged in livestock/ poultry business etc. due to better access to markets	The persons engaged in business/ trading/ running shops due to better connectivity
1	Salem	15	66.67	80	60	50	40
2	Tirunelveli	15	100	80	80	53.33	53.33
3	Tiruvannamalai	15	100	100	80	73.33	73.33
<b>Tamilnadu</b>		<b>45</b>	<b>88.89</b>	<b>87.5</b>	<b>75</b>	<b>60</b>	<b>57.5</b>

Source : Field Survey

## **7.2. Impact on Improvements in Quality of Life**

### **7.2.1. Change in Status of Quality of Life According to Socio-Economic Parameters**

After the implementation of PMGSY socio-economic characteristics of most the households have improved. In the surveyed habitations of Tamil Nadu, households weighed score on socio-economic parameters in the range 0-15 was 35.47 percent before PMGSY and it is reduced to 16.98 percent after PMGSY. Households weighed score in the range 16-25 was 48.98 percent before PMGSY and it is increased to 53.33 percent after PMGSY. Households weighed score in the range 26-35 was 14.84 percent before PMGSY and it is increased to 26.04 percent after PMGSY. Households weighed score more than 35 was 0.71 percent before PMGSY and it is increased to 3.64 percent after PMGSY. In 84.98 percent of households score has increased after PMGSY, in 0.8 percent of households score has decreased and in 14.22 percent of households there is no change in the score. *Refer Table 7.4.*

In the surveyed habitations of Salem district, households weighed score on socio-economic parameters in the range 0-15 was 40 percent before PMGSY and it is reduced to 18.4 percent after PMGSY. Households weighed score in the range 16-25 was 50.67 percent before PMGSY and it is increased to 58.93 percent after PMGSY. Households weighed score in the range 26-35 was 9.07 percent before PMGSY and it is increased to 20.8 percent after PMGSY. Households weighed score more than 35 was 0.27 percent before PMGSY and it is increased to 1.87 percent after PMGSY. In 91.2 percent of households score has increased after PMGSY, in 1.6 percent of households score has decreased and in 7.2 percent of households there is no change in the score.

In the surveyed habitations of Tirunelveli district, households weighed score on socio-economic parameters in the range 0-15 was 17.07 percent before PMGSY and it is reduced to 5.07 percent after PMGSY. Households weighed score in the range 16-25 was 50.93 percent before PMGSY and it is reduced

to 43.2 percent after PMGSY. Households weighed score in the range 26-35 was 30.4 percent before PMGSY and it is increased to 44 percent after PMGSY. Households weighed score more than 35 was 1.6 percent before PMGSY and it is increased to 7.73 percent after PMGSY. In 81.6 percent of households score has increased after PMGSY, in 0.53 percent of households score has decreased and in 17.87 percent of households there is no change in the score.

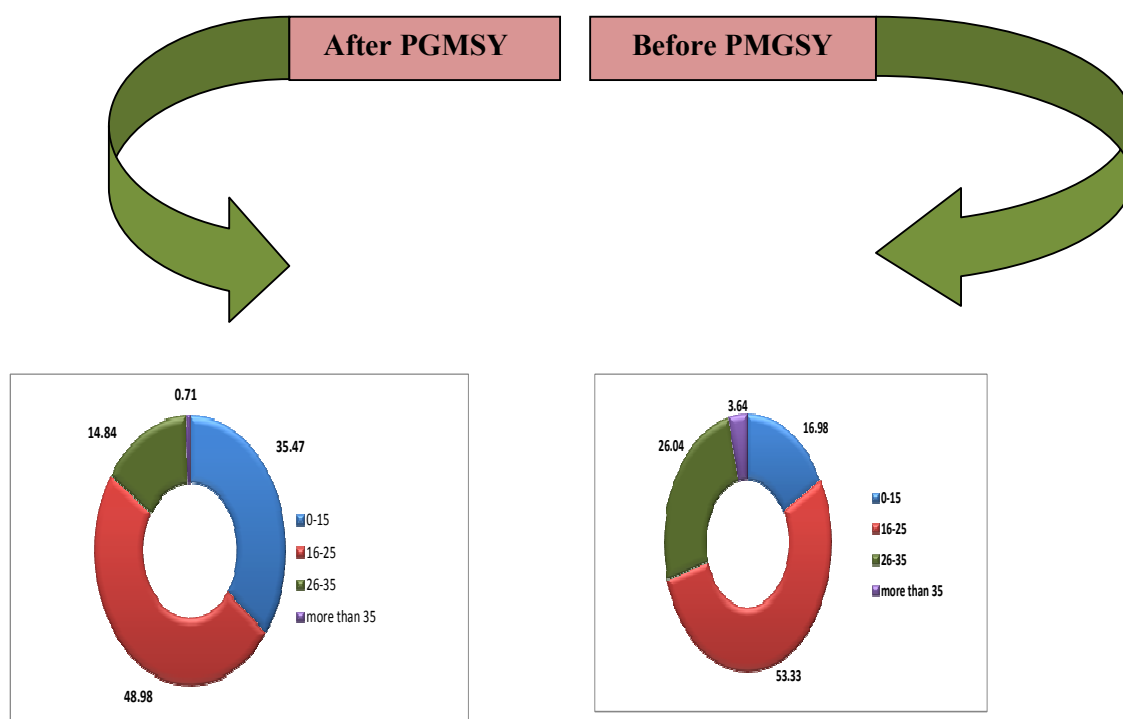
In the surveyed habitations of Tiruvannamalai district, households weighed score on socio-economic parameters in the range 0-15 was 49.33 percent before PMGSY and it is reduced to 27.47 percent after PMGSY. Households weighed score in the range 16-25 was 45.33 percent before PMGSY and it is increased to 57.87 percent after PMGSY. Households weighed score in the range 26-35 was 5.07 percent before PMGSY and it is increased to 13.33 percent after PMGSY. Households weighed score more than 35 was 0.27 percent before PMGSY and it is increased to 1.33 percent after PMGSY. In 82.13 percent of households score has increased after PMGSY, in 0.27 percent of households score has decreased and in 17.6 percent of households there is no change in the score.

**Table 7.4 Change in status of quality of life of respondent households in the sample habitations before and after PMGSY Road**

District	No. of HH covered	Households weighted score on socio-economic parameters before PMGSY				Households weighted score on socio-economic parameters after PMGSY				% of HH where score has increased post PMGSY	% of HH where score has decreased post PMGSY
		0-15	16-25	26-35	more than 35	0-15	16-25	26-35	more than 35		
Salem	375	40	50.67	9.07	0.27	18.4	58.93	20.8	1.87	91.2	1.6
Tirunelveli	375	17.07	50.93	30.4	1.6	5.07	43.2	44	7.73	81.6	0.53
Tiruvannamalai	375	49.33	45.33	5.07	0.27	27.47	57.87	13.33	1.33	82.13	0.27
<b>Tamilnadu</b>	<b>1125</b>	<b>35.47</b>	<b>48.98</b>	<b>14.84</b>	<b>0.71</b>	<b>16.98</b>	<b>53.33</b>	<b>26.04</b>	<b>3.64</b>	<b>84.98</b>	<b>0.8</b>

Source : Field Survey

**Figure 7.3: Households Weighed Score on Socio-economic Parameters in Sample Habitations**



Source: Figures generated from Table 7.4

In the control habitations of Tamil Nadu, control households weighed score on socio-economic parameters in the range 0-15 was 35.56 percent during the previous period and it is reduced to 19.79 percent during the current period. Households weighed score in the range 16-25 was 47.86 percent during the previous period and it is increased to 51.07 percent during the current period. Households weighed score in the range 26-35 was 15.51 percent during the previous period and it is increased to 24.6 percent during the current period. Households weighed score more than 35 was 1.07 percent during the previous period and it is increased to 4.55 percent during the current period. In 81.55 percent of households score has increased during the current period, in 1.6 percent of households score has decreased



and in 16.85 percent of households there is no change in the score. Refer Table 7.4 (a).

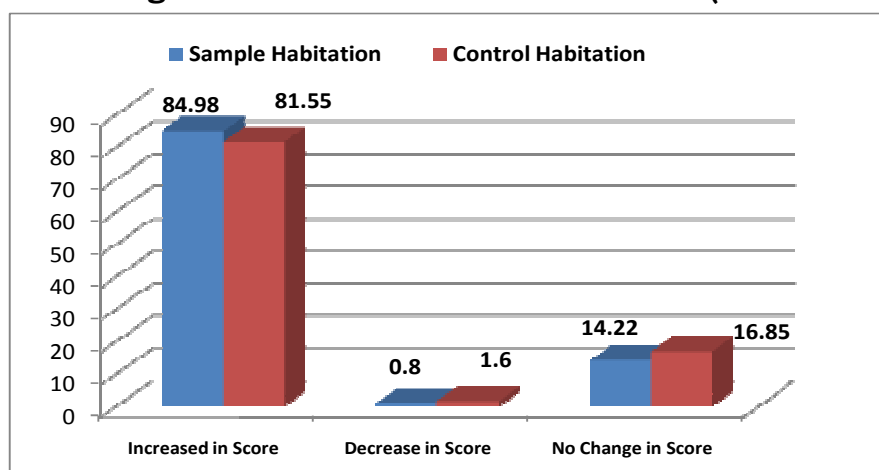
The score has increased during the period in 89.6 percent of control households in Salem district, 70.97 percent of control households in Tirunelveli district and 84 percent of control households in Tiruvannamalai district. The score has decreased in 0.8 percent of control households in Salem district, 4.03 percent of control households in Tirunelveli district and no control households in Tiruvannamalai district. There is no change in the score in 9.6 percent of control households in Salem district, 25 percent of control households in Tirunelveli district and 16 percent of control households in Tiruvannamalai district.

**Table 7.4 (a) Change in status of quality of life of respondent households in the surveyed control habitations during the period**

District	No. of control HH covered	Households weighted score on socio-economic parameters during the pervious period				Households weighted score on socio-economic parameters during the current period				% of HH where score has increased during the period	% of HH where score has decreased during the period
		0-15	16-25	26-35	more than 35	0-15	16-25	26-35	more than 35		
Salem	125	27.2	52.8	19.2	0.8	12	54.4	28.8	4.8	89.6	0.8
Tirunelveli	124	17.74	56.45	23.39	2.42	10.48	47.58	33.87	8.06	70.97	4.03
Tiruvannamalai	125	61.6	34.4	4	0	36.8	51.2	11.2	0.8	84	0
<b>Tamilnadu</b>	<b>374</b>	<b>35.56</b>	<b>47.86</b>	<b>15.51</b>	<b>1.07</b>	<b>19.79</b>	<b>51.07</b>	<b>24.6</b>	<b>4.55</b>	<b>81.55</b>	<b>1.6</b>

Source : Field Survey

**Figure 7.4: Changes in the Score after PMGSY in Sample Habitations and During the Period in Control Habitations (% of Households)**



Source: Figures generated from Tables 7.4 & 7.4 (a)

### **7.2.2. Impact on Poverty Alleviation**

Out of the 1125 households surveyed in Tamil Nadu, 871 are BPL households. BPL households reported improvement in their economic status is 82.78 percent. The average increase in the score is four. Increase in score up to 10 percent is reported by 28.99 percent of households, increase in the range 11-25 percent is reported by 38.7 percent of households, increase in the range 26-50 percent is reported by 21.36 percent of households and increase more than 50 percent is reported by 10.96 percent of households. Refer Table 7.5.

Number sample BPL households are 327 in Salem district, 294 in Tirunelveli district and 250 in Tiruvannamalai district. BPL households reported improvement in their economic status is 91.13 percent in Salem district, 80.27 percent in Tirunelveli district and 74.8 percent in Tiruvannamalai district. Increase in score up to 10 percent is reported by 27.85 percent of households in Salem district, 37.29 percent of households in Tirunelveli district and 20.32 percent of households in Tiruvannamalai district. Increase in score in the range 11-25 percent is reported by 38.93 percent of households in Salem district, 40.68 percent of households in Tirunelveli district and 35.83 percent of households in Tiruvannamalai district. Increase in score in the range 26-50 percent is reported by 22.48 percent of households in Salem district, 13.14 percent of households in Tirunelveli district and 29.95 percent of households in Tiruvannamalai district. Increase in score more than 50 percent is reported by 10.74 percent of households in Salem district, 8.9 percent of households in Tirunelveli district and 13.9 percent of households in Tiruvannamalai district.

**Table 7.5 Impact on poverty alleviation - Increase in scores of BPL households post PMGSY**

*(% of households)*

S. No.	District	No. of households Covered	No. of BPL households	% of BPL households reported increase in scores	average increase in scores	% increase in scores			
						upto 10%	11-25%	26-50%	more than 50%
1	Salem	375	327	91.13	4	27.85	38.93	22.48	10.74
2	Tirunelveli	375	294	80.27	4	37.29	40.68	13.14	8.9
3	Tiruvannamalai	375	250	74.8	4	20.32	35.83	29.95	13.9
<b>Tamilnadu</b>		<b>1125</b>	<b>871</b>	<b>82.78</b>	<b>4</b>	<b>28.99</b>	<b>38.7</b>	<b>21.36</b>	<b>10.96</b>

Source : Field Survey

Out of 374 control households in Tamil Nadu 254 households are under BPL category. BPL households reported improvement in their economic status is 78.35 percent. Average increase in score is five. Increase in score up to 10 percent is reported by 26.63 percent of control households, increase in the range 11-25 percent is reported by 39.7 percent of control households, increase in the range 26-50 percent is reported by 19.1 percent of control households and increase more than 50 percent is reported by 14.57 percent of control households. *Refer Table 7.5 (a).*

Number control BPL households are 90 in Salem district, 86 in Tirunelveli district and 78 in Tiruvannamalai district. BPL control households reported improvement in their economic status is 90 percent in Salem district, 68.6 percent in Tirunelveli district and 75.64 percent in Tiruvannamalai district. Increase in score up to 10 percent is reported by 29.63 percent of control households in Salem district, 38.98 percent of control households in Tirunelveli district and 10.17 percent of control households in Tiruvannamalai district. Increase in score in the range 11-25 percent is reported by 50.62 percent of control households in Salem district, 27.12 percent of control households in Tirunelveli district and 37.29 percent of control households in Tiruvannamalai district. Increase in score in the range 26-50 percent is reported by 14.81 percent of control households in Salem district, 10.17 percent of control households in Tirunelveli district and 33.9 percent of control households in Tiruvannamalai district. Increase in score

more than 50 percent is reported by 4.94 percent of control households in Salem district, 23.74 percent of control households in Tirunelveli district and 18.64 percent of control households in Tiruvannamalai district.

**Table 7.5 (a) Impact on poverty alleviation - Increase in scores of BPL households (Control) during the period**

(% of households)

S.No.	District	No. of households Covered	No. of BPL households	% of BPL households reported increase in scores	average increase in scores	% increase in scores			
						upto 10%	11-25%	26-50%	more than 50%
1	Salem	125	90	90	3	29.63	50.62	14.81	4.94
2	Tirunelveli	124	86	68.6	7	38.98	27.12	10.17	23.73
3	Tiruvannamalai	125	78	75.64	5	10.17	37.29	33.9	18.64
<b>Tamilnadu</b>		<b>374</b>	<b>254</b>	<b>78.35</b>	<b>5</b>	<b>26.63</b>	<b>39.7</b>	<b>19.1</b>	<b>14.57</b>

Source : Field Survey

### 7.2.3. Improvement in Quality of Life

The households experienced improvements in various areas of their lives after the implementation of PMGSY road. After PMGSY road become operative in Tamil Nadu 14.93 percent of households have better dwelling unit, 15.73 percent of households have access to better sanitation facilities, 48.18 percent of households reported increase in ownership of consumer durables and 4.53 percent of households reported reduction in the migration. *Refer Table 7.6.*

Households owned better dwelling unit after PMGSY road is 14.4 percent in Salem district, 10.4 percent in Tirunelveli district and 20 percent in Tiruvannamalai district. Households having access to better sanitation facilities after PMGSY road is 10.4 percent in Salem district, 27.2 percent in Tirunelveli district and 9.6 percent in Tiruvannamalai district. Households reported increase in ownership of consumer durables is 42.67 percent in Salem district, 57.33 percent in Tirunelveli district and 44.53 percent in Tiruvannamalai district. Households reported reduction in migration is 1.33 percent in Salem district, 2.13 percent in Tirunelveli district and 10.13 percent in Tiruvannamalai district.

**Table 7.6 Change in status of quality of life of households in the sample habitations after PMGSY Road**

*(% of households)*

S.No.	District	No. of HH covered	Owning a better dwelling unit	Having access to better sanitation facilities	Reported increase in ownership of consumer durables	Reported reduction in migration outside
1	Salem	375	14.4	10.4	42.67	1.33
2	Tirunelveli	375	10.4	27.2	57.33	2.13
3	Tiruvannamalai	375	20	9.6	44.53	10.13
<b>Tamilnadu</b>		<b>1125</b>	<b>14.93</b>	<b>15.73</b>	<b>48.18</b>	<b>4.53</b>

Source : Field Survey

In the case of control habitations is Tamil Nadu 19.25 percent of the control households owned a better dwelling unit, 13.9 percent of the control households having access to better sanitation facilities, 45.99 percent of the control households reported increase in ownership of consumer durables and 2.67 percent of control households reported reduction in migration during the period. *Refer Table 7.6.(a).*

Control households owned better dwelling unit after PMGSY road is 6.4 percent in Salem district, 19.35 percent in Tirunelveli district and 32 percent in Tiruvannamalai district. Control households having access to better sanitation facilities after PMGSY road is 19.2 percent in Salem district, 16.13 percent in Tirunelveli district and 6.4 percent in Tiruvannamalai district. Control households reported increase in ownership of consumer durables is 67.2 percent in Salem district, 36.29 percent in Tirunelveli district and 34.4 percent in Tiruvannamalai district. Control households reported reduction in migration is 0.8 percent in Salem district, 0.81 percent in Tirunelveli district and 6.4 percent in Tiruvannamalai district.

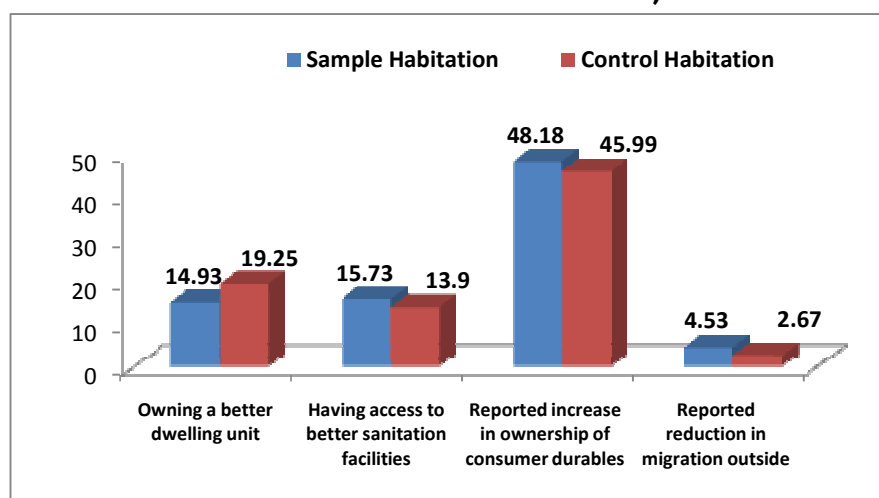
**Table 7.6 (a) Change in status of quality of life of respondent households in control habitations during the period**

(% of households)

S.No.	District	No. of HH covered	Owning a better dwelling unit	Having access to better sanitation facilities	Reported increase in ownership of consumer durables	Reported reduction in migration outside
1	Salem	125	6.4	19.2	67.2	0.8
2	Tirunelveli	124	19.35	16.13	36.29	0.81
3	Tiruvannamalai	125	32	6.4	34.4	6.4
<b>Tamilnadu</b>		<b>374</b>	<b>19.25</b>	<b>13.9</b>	<b>45.99</b>	<b>2.67</b>

Source : Field Survey

**Figure 7.5: Changes in the Quality of Life after PMGSY in Sample Habitations and During the Period in Control Habitations (% of Households)**



Source: Figures generated from Tables 7.6 & 7.6 (a)

### 7.3. Improvements in Income Generation Scenario in the Habitations

After the implementation of PMGSY road in Tamil Nadu, new enterprise/industry is set up in 20 percent of the habitations. Average number of new enterprise set up in each habitation is two and the average number of persons employed in the new enterprises is 48. The PMGSY road encouraged people in 51.11 percent of the habitations to migrate to other places in search of better employment opportunities. In 13.33 percent of habitations there is migration of labour force in to these habitations. Both in

and out migration takes place in 28.89 percent of habitations and there is no change in 6.67 percent of habitations. *Refer Table 7.7.*

New enterprise is set up in 26.67 percent of habitations in Salem district, 20 percent of habitations in Tirunelveli district and 13.33 percent of habitations in Tiruvannamalai district. Average number of new enterprise set up in each habitation is two in Salem district, one in Tirunelveli district and one in Tiruvannamalai district. Average number of persons employed in the new enterprises is 13 in Salem district, 127 in Tirunelveli district and one in Tiruvannamalai district. The PMGSY road encouraged people to migrate to other places in search of better employment opportunities in 46.67 percent of habitations in Salem district, 53.33 percent of habitations in Tirunelveli and Tiruvannamalai district. In-migration of labour force occurred in 26.67 percent of habitations in Salem district and 13.33 percent of habitations in Tirunelveli district. Both in and out migration takes place in 26.67 percent of habitations in Salem district, 20 percent of habitations in Tirunelveli district and 40 percent of habitations in Tiruvannamalai district. No change in migration in 13.33 percent of habitations in Tirunelveli district and 6.67 percent of habitations in Tiruvannamalai district.

**Table 7.7 Improvements in income generation scenario in the habitations**

*(% of habitations)*

District	Habitations Covered	New enterprise / industry setup in the habitation after PMGSY	Habitations where new enterprise/ industry was setup		Changes in the migration of labour/ workers			
			Average no. of such enterprises setup	Average no. of persons engaged/ employed	More out-migration of labour for seeking employment	More in-migration of labour coming to the habitation for work	Both	No changes
Salem	15	26.67	2	13	46.67	26.67	26.67	0
Tirunelveli	15	20	1	127	53.33	13.33	20	13.33
Tiruvannamalai	15	13.33	1	1	53.33	0	40	6.67
<b>Tamilnadu</b>	<b>45</b>	<b>20</b>	<b>2</b>	<b>48</b>	<b>51.11</b>	<b>13.33</b>	<b>28.89</b>	<b>6.67</b>

Source : Field Survey

## **Chapter 8**

### **Impact on Health**

#### **8.1. Improved Connectivity to Health Facilities**

In the sample habitations of Tamil Nadu, all weather pucca roads is available to Public Health Centre (PHC) in 68.89 percent of habitations, to govt. hospital in 77.78 habitations and to private hospital/nursing home in 71.11 percent of habitations. In the case of maternity emergencies there is reduction in travel time to reach the nearest health facility in 46.67 percent of habitations after the implementation of PMGSY road. Out of that in 31.11 percent of habitations reduction up to 30 minutes is reported, in 13.33 percent of habitations reduction in the range 30-60 minutes is reported and in 2.22 percent of habitations reduction of more than 60 minutes is reported. In the case of serious physical injuries or accidents there is reduction in travel time to reach the nearest health facility in 48.89 percent of habitations after the implementation of PMGSY road. Out of that in 33.33 percent of habitations reduction up to 30 minutes is reported, in 13.33 percent of habitations reduction in the range 30-60 minutes is reported and in 2.22 percent of habitations reduction of more than 60 minutes is reported. In the case of other medical emergencies reduction in travel time to reach the nearest health facility is reported in 48.89 percent of habitations after the implementation of PMGSY road. Out of that in 31.11 percent of habitations reduction up to 30 minutes is reported, in 15.56 percent of habitations reduction in the range 30-60 minutes is reported and in 2.22 percent of habitations reduction of more than 60 minutes is reported.

All weather pucca road connectivity is available to PHC in 93.33 percent of habitations in Salem district, 73.33 percent of habitations in Tirunelveli district and 40 percent of habitations in Tiruvannamalai district. All weather pucca roads is available to govt. hospital in 93.33 percent of habitations in Salem district, 80 percent of habitations in Tirunelveli district and 60 percent of habitations in Tiruvannamalai district. All weather pucca roads is available to private hospital/nursing home in 53.33 percent of habitations in



Tiruvannamalai district and 80 percent of habitations in Salem & Tirunelveli districts. Reduction in travel time to reach nearest health facility in the case of maternity emergency is reported in 86.67 percent of habitations in Salem district, 46.67 percent of habitations in Tirunelveli district and 6.67 percent of habitations in Tiruvannamalai district. Reduction in travel time up to 30 minutes is reported in 60 percent of habitations in Salem district, 26.67 percent of habitations in Tirunelveli district and 6.67 percent of habitations in Tiruvannamalai district. Reduction in travel time in the range 30-60 minutes is reported in 26.67 percent of habitations in Salem district and 13.33 percent of habitations in Tirunelveli district. Reduction in travel time to more than 60 minutes is reported in 6.67 percent of habitations in Tirunelveli district.

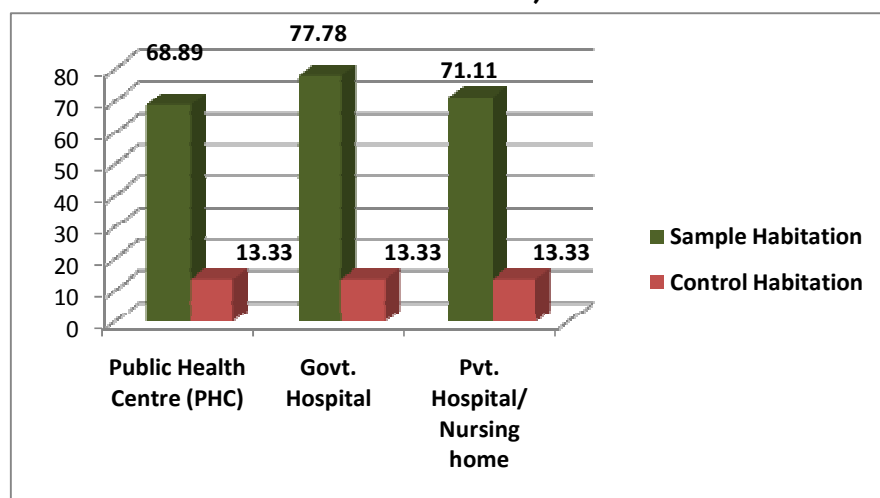
In the case of serious injuries or accidents reduction in travel time to reach nearest health facility is reported in 86.67 percent of habitations in Salem district, 46.67 percent of habitations in Tirunelveli district and 13.33 percent of habitations in Tiruvannamalai district. Reduction in travel time up to 30 minutes is reported in 60 percent of habitations in Salem district, 26.67 percent of habitations in Tirunelveli district and 13.33 percent of habitations in Tiruvannamalai district. Reduction in travel time in the range 30-60 minutes is reported in 26.67 percent of habitations in Salem district and 13.33 percent of habitations in Tirunelveli district. Reduction in travel time to more than 60 minutes is reported in 6.67 percent of habitations in Tirunelveli district.

In the case of other medical emergencies reduction in travel time to reach nearest health facility is reported in 86.67 percent of habitations in Salem district, 46.67 percent of habitations in Tirunelveli district and 13.33 percent of habitations in Tiruvannamalai district. Reduction in travel time up to 30 minutes is reported in 53.33 percent of habitations in Salem district, 26.67 percent of habitations in Tirunelveli district and 13.33 percent of habitations in Tiruvannamalai district. Reduction in travel time in the range 30-60 minutes is reported in 33.33 percent of habitations in

Salem district and 13.33 percent of habitations in Tirunelveli district. Reduction in travel time to more than 60 minutes is reported in 6.67 percent of habitations in Tirunelveli district. *Refer table A.9 in Appendix.*

In the case of control habitations of Tamil Nadu, in 13.33 percent of habitations all weather pucca roads are available to Public Health Centre (PHC), govt. hospital and private hospital/nursing home. In the case of maternity emergencies there is reduction in travel time to reach the nearest health facility in 13.33 percent of habitations during the period and the reduction in time is up to 30 minutes. During the period 30 minutes reduction in travel time to reach the nearest health facility is reported in 6.67 percent of habitations in the case of serious physical injuries or accidents and in 13.33 percent of habitations in the case of other medical emergencies. *Refer table A.10 in Appendix.*

**Figure 8.1: Changes in Connectivity to Health Facilities after PMGSY in Sample Habitations and During the Period in Control Habitations (% of Habitations)**



Source: Figures generated from Tables A.9 & A.10 in Appendix

## 8.2. Changes in Status of Health Facilities within the Habitations

After the implementation of PMGSY road in the sample habitations of Tamil Nadu, health sub centre is available in 13.33 percent of habitations, public

health centre in 11.11 percent of habitations, availability of govt. doctors in 15.56 percent of habitations, increase in number of ANMs in 8.89 percent of habitations, appointment of ASHA workers in 15.56 percent of habitations. Village health committee is constituted in 6.67 percent of habitations, village health plan is prepared in 2.22 percent of habitations and private medical practitioner is available in 11.11 percent of habitations. *Refer Table 8.1.*

In the sample habitations of Salem district, 6.67 percent of habitations have health sub centre, public health centre, availability of govt. doctors and availability of ASHA workers. Health sub centres and PHC are not available in any of the sample habitations of Tirunelveli district. Private medical practitioner is available in 13.33 percent of habitations in Tirunelveli district. In the sample habitations of Tiruvannamalai district, health sub centre is available in 33.33 percent of habitations, public health centre in 26.67 percent of habitations, availability of govt. doctors in 40 percent of habitations, increase in number of ANMs in 26.67 percent of habitations, appointment of ASHA workers in 40 percent of habitations. Village health committee is constituted in 20 percent of habitations, village health plan is prepared in 6.67 percent of habitations and private medical practitioner is available in 20 percent of habitations.

**Table 8.1 Change in Health facilities status within sample habitations after PMGSY Road**  
(% of habitations)

District	No. of habitations Covered	Health Sub-Centre	Public Health Centre (PHC)	Availability of Govt. doctors	Increase in Number of ANMs	Appointment of ASHA	Constitution of village health committee	Preparation of village health plan	Availability of Private medical practitioner
Salem	15	6.67	6.67	6.67	0	6.67	0	0	0
Tirunelveli	15	0	0	0	0	0	0	0	13.33
Tiruvannamalai	15	33.33	26.67	40	26.67	40	20	6.67	20
<b>Tamilnadu</b>	<b>45</b>	<b>13.33</b>	<b>11.11</b>	<b>15.56</b>	<b>8.89</b>	<b>15.56</b>	<b>6.67</b>	<b>2.22</b>	<b>11.11</b>

Source : Field Survey

In the control habitations of Tamil Nadu, 6.67 percent of habitations have health sub centre, availability of govt. doctors, increase in number of ANMs, appointment of ASHA workers and preparation of village health plan. *The district wise details is given in Table 8.1(a).*

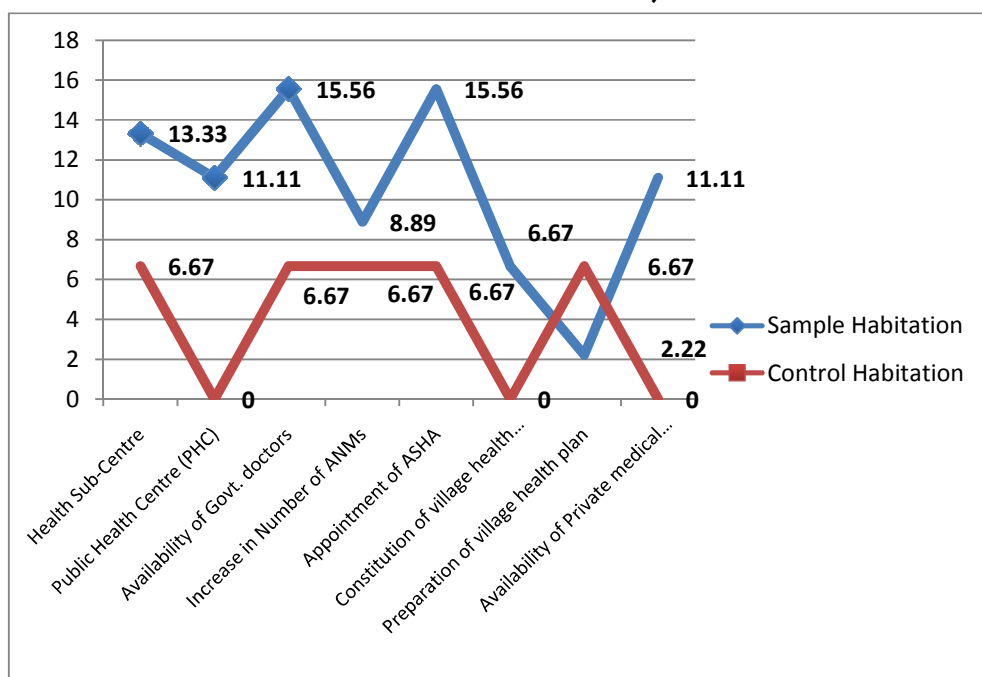
**Table 8.1 (a) Change in Health facilities status within control habitations during the period**

(% of habitations)

District	No. of habitations Covered	Health Sub-Centre	Public Health Centre (PHC)	Availability of Govt. doctors	Increase in Number of ANMs	Appointment of ASHA	Constitution of village health committee	Preparation of village health plan	Availability of Private medical practitioner
Salem	5	20	0	0	20	0	0	0	0
Tirunelveli	5	0	0	20	0	20	0	20	0
Tiruvannamalai	5	0	0	0	0	0	0	0	0
<b>Tamilnadu</b>	<b>15</b>	<b>6.67</b>	<b>0</b>	<b>6.67</b>	<b>6.67</b>	<b>6.67</b>	<b>0</b>	<b>6.67</b>	<b>0</b>

Source : Field Survey

**Figure 8.2: Changes in Health Facilities Status after PMGSY in Sample Habitations and During the Period in Control Habitations (% of Habitations)**



Source: Figures generated from Tables 8.1 & 8.1 (a)

### 8.3. Improved Pre and Post Natal Care

#### 8.3.1. Improved Pre Natal Care

It is noted that 95.24 percent of the women has received pre-natal care before PMGSY road and 93.94 percent after PMGSY road in the surveyed habitations of Tamil Nadu. The percentage of women received pre- natal care from ANM/govt. doctor in the village 34.17 before PMGSY road and it is 37.63 after PMGSY road. Women received pre-natal care from pvt. doctor/nurse in the village is 5.83 percent before PMGSY road and it is 13.98 percent after PMGSY road. The percentage of women received pre-natal care from ANM/govt. doctor outside the village 34.17 before PMGSY road and it is 33.33 after PMGSY road. Women received pre-natal care from pvt. doctor/nurse outside the village is 3.33 percent before PMGSY road and it is 5.38 percent after PMGSY road. Women received pre-natal care from others in the village is 22.5 percent before PMGSY road and it is 9.68 percent after PMGSY road.

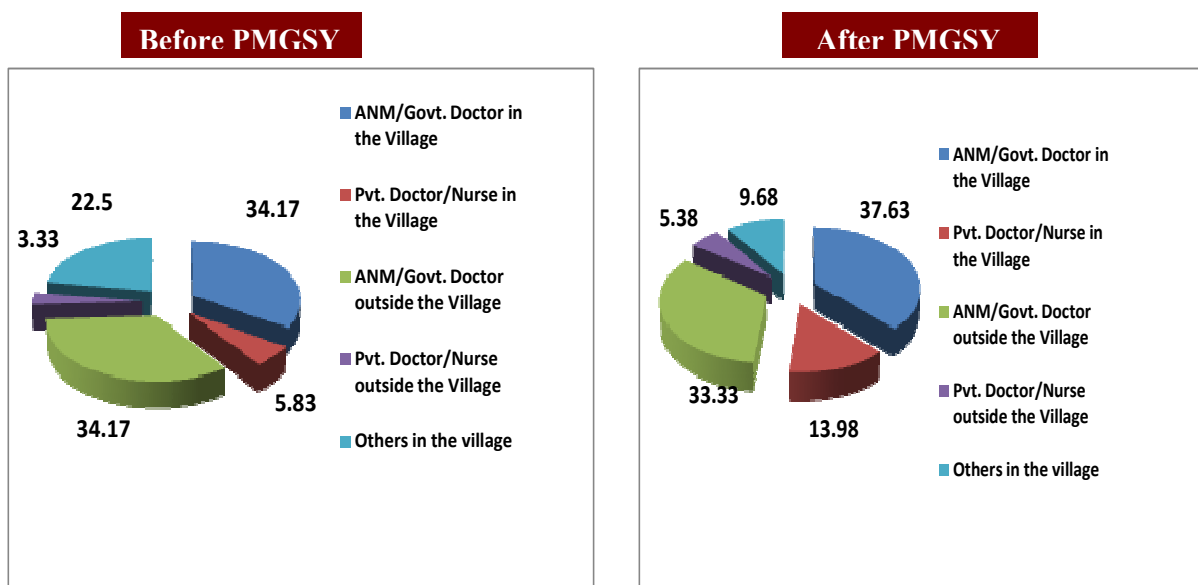
Women received pre-natal care before PMGSY road is 92.19 percent in Salem district, 94.12 percent in Tirunelveli district and cent percent in Tiruvannamalai district. After the implementation of PMGSY road, women received pre-natal care is 95.45 percent in Salem district, 78.57 percent in Tirunelveli district and cent percent in Tiruvannamalai district. *The location from where they received pre-natal care is given in Table 8.2.*

**Table 8.2. Change in status of pre natal care of women of respondent households in the surveyed sample habitations before and after PMGSY Road**

District	% of women aged 15-45 in the habitations received pre-natal care before PMGSY Road	If 'Yes', where were they provided pre-natal care					% of women aged 15-45 in the habitations received pre-natal care after PMGSY Road	If 'Yes', where were they provided pre-natal care				
		ANM /Govt. Doctor in the Village	Pvt. Doctor/ Nurse in the Village	ANM/ Govt. Doctor outside the Village	Pvt. Doctor/ Nurse outside the Village	Others in the village		ANM/ Govt. Doctor in the Village	Pvt. Doctor/ Nurse in the Village	ANM/ Govt. Doctor outside the Village	Pvt. Doctor/ Nurse outside the Village	Others in the village
Salem	92.19	50.85	3.39	18.64	5.08	22.03	95.45	52.38	17.46	22.22	4.76	3.17
Tirunelveli	94.12	0	12.5	81.25	6.25	0	78.57	0	0	81.82	18.18	0
Tiruvannamalai	100	24.44	6.67	37.78	0	31.11	100	10.53	10.53	42.11	0	36.84
<b>Tamilnadu</b>	<b>95.24</b>	<b>34.17</b>	<b>5.83</b>	<b>34.17</b>	<b>3.33</b>	<b>22.5</b>	<b>93.94</b>	<b>37.63</b>	<b>13.98</b>	<b>33.33</b>	<b>5.38</b>	<b>9.68</b>

Source : Field Survey

**Figure 8.3: Percentage of Women Received Pre-natal Care in Sample Habitations**



Source: Figures generated from Table 8.2

Source: Figures generated from Table 8.2

In the case of control habitations of Tamil Nadu 94.12 percent of the women has received pre-natal care during the previous period and cent percent during the current period. The percentage of women received pre- natal care from ANM/govt. doctor in the village 31.25 during the previous period and it is 63.16 during the current period. Women received pre-natal care from pvt. doctor/nurse in the village is 6.25 percent during the previous period and it is 5.26 percent during the current period. The percentage of women received pre- natal care from ANM/govt. doctor outside the village 31.25 during the previous period and it is 26.32 during the current period. Women received pre-natal care from pvt. doctor/nurse outside the village is zero percent during the previous period and it is 5.26 percent during the current period. Women received pre-natal care from others in the village is 31.25 percent during the previous period and it is zero percent during the current period. Women received pre-natal care in the control habitations during the previous period is 66.67 percent in Tirunelveli district and cent percent in Salem & Tiruvannamalai districts. During the current period women

received pre-natal care is cent percent in Tirunelveli, Salem & Tiruvannamalai districts. *The location from where they received pre-natal care is given in Table 8.2(a).*

**Table 8.2 (a) Change in status of pre & post natal care of women of respondent households in the surveyed control habitations during the period**

District	% of women aged 15-45 in the habitations received pre-natal care during the previous period	If 'Yes', where were they provided pre-natal care					% of women aged 15-45 in the habitations received pre-natal care during the current period	If 'Yes', where were they provided pre-natal care				
		ANM/ Govt. Doctor in the Village	Pvt. Doctor/ Nurse in the Village	ANM/ Govt. Doctor outside the Village	Pvt. Doctor/ Nurse outside the Village	Others in the village		ANM/ Govt. Doctor in the Village	Pvt. Doctor/ Nurse in the Village	ANM/ Govt. Doctor outside the Village	Pvt. Doctor/ Nurse outside the Village	Others in the village
Salem	100	60	0	40	0	0	100	62.5	6.25	25	6.25	0
Tirunelveli	66.67	0	0	100	0	0	100	0	0	100	0	0
Tiruvannamalai	100	22.22	11.11	11.11	0	55.56	100	100	0	0	0	0
<b>Tamilnadu</b>	<b>94.12</b>	<b>31.25</b>	<b>6.25</b>	<b>31.25</b>	<b>0</b>	<b>31.25</b>	<b>100</b>	<b>63.16</b>	<b>5.26</b>	<b>26.32</b>	<b>5.26</b>	<b>0</b>

Source : Field Survey

### 8.3.2. Improved Post Natal Care

It is identified that 62.7 percent of women who has given birth to a child before PMGSY has received adequate care after the birth of her child in the surveyed habitations of Tamil Nadu. After the implementation of PMGSY road it has reduced to 61.62 percent. The percentage of women received post- natal care from ANM/govt. doctor in the village 27.85 before PMGSY road and it is increased to 45.9 after PMGSY road. Women received post-natal care from pvt. doctor/nurse in the village is 13.92 percent before PMGSY road and it is increased to 54.1 percent after PMGSY road. The percentage of women received post- natal care from ANM/govt. doctor outside the village 40.51 before PMGSY road and it is zero after PMGSY road. Women received post-natal care from pvt. doctor/nurse outside the village is 3.8 percent before PMGSY road and it is zero percent after PMGSY road. Women received post-natal care from others in the village is 13.92 percent before PMGSY road and it is zero percent after PMGSY road.

Women received post-natal care before PMGSY road is 46.88 percent in Salem district, 88.24 percent in Tirunelveli district and 75.56 percent in

Tiruvannamalai district. After the implementation of PMGSY road, women received post-natal care is 63.64 percent in Salem district, 71.43 percent in Tirunelveli district and 47.37 percent in Tiruvannamalai district. *The location from where they received post-natal care is given in Table 8.3.*

**Table 8.3. Change in status of post natal care of women of respondent households in the surveyed sample habitations before and after PMGSY Road**

District	% of women aged 15-45 in the habitations received post-natal care before PMGSY Road	If 'Yes', where were they provided post-natal care					% of women aged 15-45 in the habitations received post-natal care after PMGSY Road	If 'Yes', where were they provided post-natal care				
		ANM/ Govt. Doctor in the Village	Pvt. Doctor/ Nurse in the Village	ANM/ Govt. Doctor outside the Village	Pvt. Doctor/ Nurse outside the Village	Others in the village		ANM/ Govt. Doctor in the Village	Pvt. Doctor/ Nurse in the Village	ANM/ Govt. Doctor outside the Village	Pvt. Doctor/ Nurse outside the Village	Others in the village
Salem	46.88	43.33	13.33	20	3.33	20	63.64	45.24	54.76	0	0	0
Tirunelveli	88.24	13.33	6.67	66.67	13.33	0	71.43	70	30	0	0	0
Tiruvannamalai	75.56	20.59	17.65	47.06	0	14.71	47.37	22.22	77.78	0	0	0
<b>Tamilnadu</b>	<b>62.7</b>	<b>27.85</b>	<b>13.92</b>	<b>40.51</b>	<b>3.8</b>	<b>13.92</b>	<b>61.62</b>	<b>45.9</b>	<b>54.1</b>	<b>0</b>	<b>0</b>	<b>0</b>

Source : Field Survey

In the case of control habitations of Tamil Nadu, 64.71 percent of women received post-natal care during the previous period and it is increased to 68.42 percent during the current period. The percentage of women received post-natal care from ANM/govt. doctor in the village 18.18 during the previous period and it is increased to 76.92 during the current period. Women received post-natal care from pvt. doctor/nurse in the village is 18.18 percent during the previous period and it is increased to 23.08 percent during the current period. The percentage of women received post-natal care from ANM/govt. doctor outside the village 63.64 during the previous period and it is zero during the current period.

Women received post-natal care during the previous period is 80 percent in Salem district, cent percent in Tirunelveli district and 44.44 percent in Tiruvannamalai district. During the current period, women received post-natal care is 68.75 percent in Salem district, zero percent in Tirunelveli



district and cent percent in Tiruvannamalai district. *The location from where they received post-natal care is given in Table 8.3(a).*

**Table 8.3 (a) Change in status of post natal care of women of respondent households in the surveyed control habitations during the period**

District	% of women aged 15-45 in the habitations received post-natal care during the previous period	If 'Yes', where were they provided post-natal care					% of women aged 15-45 in the habitations received post-natal care during the current period	If 'Yes', where were they provided post-natal care				
		ANM/ Govt. Doctor in the Village	Pvt. Doctor/ Nurse in the Village	ANM/ Govt. Doctor outside the Village	Pvt. Doctor/ Nurse outside the Village	Others in the village		ANM/ Govt. Doctor in the Village	Pvt. Doctor/ Nurse in the Village	ANM/ Govt. Doctor outside the Village	Pvt. Doctor/ Nurse outside the Village	Others in the village
Salem	80	25	25	50	0	0	68.75	72.73	27.27	0	0	0
Tirunelveli	100	0	0	100	0	0	0	0	0	0	0	0
Tiruvannamalai	44.44	25	25	50	0	0	100	100	0	0	0	0
<b>Tamilnadu</b>	<b>64.71</b>	<b>18.18</b>	<b>18.18</b>	<b>63.64</b>	<b>0</b>	<b>0</b>	<b>68.42</b>	<b>76.92</b>	<b>23.08</b>	<b>0</b>	<b>0</b>	<b>0</b>

Source : Field Survey

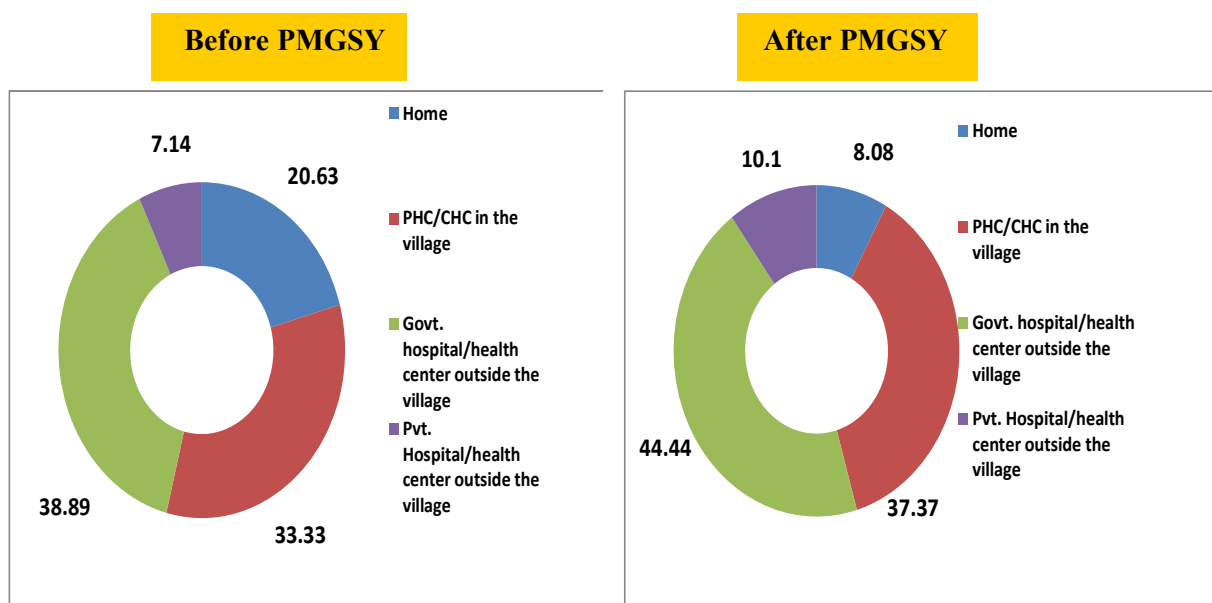
#### **8.4. Increase in Number of Institutional Deliveries**

In the surveyed habitations of Tamil Nadu 79.36 percent of the child birth took place in hospitals before PMGSY road and after PMGSY road it is increased to 91.91 percent. The deliveries in the hospitals outside the village are 46.03 percent before PMGSY road and it is increased to 54.54 percent after PMGSY road. The construction of PMGSY road reduced deliveries at home. *Refer Table 8.4.*

In Salem district institutional deliveries is 71.88 percent before PMGSY road and it is increased to 90.91 percent after the implementation of PMGSY road. In Tirunelveli district institutional deliveries is cent percent before and after PMGSY road. In Tiruvannamalai district institutional deliveries is 82.22 percent before PMGSY road and it is increased to 89.47 percent after the implementation of PMGSY road. The deliveries in the hospitals outside the village before PMGSY road was 37.5 percent in Salem district, 88.23 percent in Tirunelveli district and 42.22 percent in Tiruvannamalai district. After the implementation of PMGSY deliveries in the hospitals outside the

village is increased and it is 46.97 percent in Salem district, 92.86 percent in Tirunelveli district and 52.63 percent in Tiruvannamalai district.

**Figure 8.4: Percentage of Women as per Place of Delivery in Sample Habitations**



Source: Figures generated from Table 8.4

**Table 8.4. Change in status of institutional delivery in the surveyed sample habitations before and after PMGSY Road**

S. No.	District	Before PMGSY % of women delivered a child at				After PMGSY % of women delivered a child at			
		Home	PHC/CHC in the village	Govt. hospital/health center outside the village	Pvt. Hospital/health center outside the village	Home	PHC/CHC in the village	Govt. hospital/health center outside the village	Pvt. Hospital/health center outside the village
1	Salem	28.12	34.38	26.56	10.94	9.09	43.94	36.36	10.61
2	Tirunelveli	0	11.76	76.47	11.76	0	7.14	78.57	14.29
3	Tiruvannamalai	17.78	40	42.22	0	10.53	36.84	47.37	5.26
<b>Tamilnadu</b>		<b>20.63</b>	<b>33.33</b>	<b>38.89</b>	<b>7.14</b>	<b>8.08</b>	<b>37.37</b>	<b>44.44</b>	<b>10.1</b>

Source : Field Survey

In the control habitations of Tamil Nadu 85.72 percent of the child birth took place in hospitals during the previous period and during current period it is 84.21 percent. *Refer Table 8.4 (a).*

In Salem district institutional deliveries is 80 percent during the previous period and it is increased to 81.25 percent during the current period. In Tirunelveli district institutional deliveries is cent percent during the previous & current periods. In Tiruvannamalai district institutional deliveries is 83.33 percent during the previous period and it is increased to cent percent during the current period.

**Table 8.4(a) Change in status of institutional delivery in the control habitations during the period**

S. No.	District	During the previous period % of women delivered a child at				During the current period % of women delivered a child at			
		Home	PHC/ CHC in the village	Govt. hospital/ health center outside the village	Pvt. Hospital /health center outside the village	Home	PHC/ CHC in the village	Govt. hospital /health center outside the village	Pvt. Hospital /health center outside the village
1	Salem	20	60	20	0	18.75	37.5	37.5	6.25
2	Tirunelveli	0	0	100	0	0	0	100	0
3	Tiruvannamalai	16.67	50	33.33	0	0	50	50	0
<b>Tamilnadu</b>		<b>14.29</b>	<b>42.86</b>	<b>42.86</b>	<b>0</b>	<b>15.79</b>	<b>36.84</b>	<b>42.11</b>	<b>5.26</b>

Source : Field Survey

### **8.5. Improved Child Immunization and Health Care**

In the sample habitations of Tamil Nadu immunization of children aged up to 5 years has increased after the implementation of PMGSY road and the increase is 0.84 percent. Immunization of children by govt. doctor/health worker/nurse in the village is increased. But immunization by school/anganwadi with in the village and govt. doctor/nurse outside the village is decreased. Refer Table 8.5.

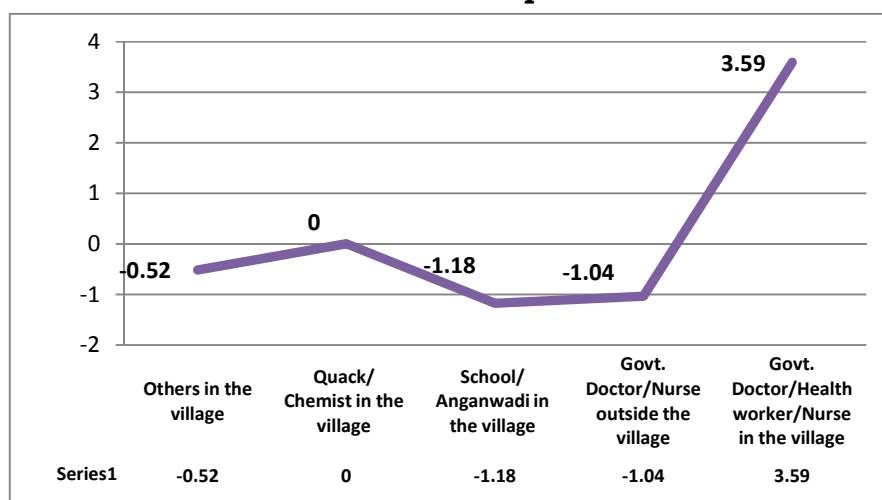
Immunization of children up to the age of 5 years is increased in Salem & Tirunelveli districts are increased after PMGSY road become operative and the amount of increase are 2.44 percent and 1.22 percent respectively. But in Tiruvannamalai district immunization of children up to the age of 5 years is decreased and the decreased amount is 2.8 percent.

**Table 8.5. Changes in immunization of children in the sample habitations after PMGSY Road**

S. No.	District	% change in children aged 5 years or younger immunized	% change in children aged 5 years or younger immunized by				
			Govt. Doctor/ Health worker/ Nurse in the village	Govt. Doctor/ Nurse outside the village	School/ Anganwadi in the village	Quack/ Chemist in the village	Others in the village
1	Salem	2.44	-4.58	2.63	5	0	-0.61
2	Tirunelveli	1.22	5.3	-0.81	-3.27	0	0
3	Tiruvannamalai	-2.8	1.51	-0.7	-2.76	0	-0.84
<b>Tamilnadu</b>		<b>0.84</b>	<b>3.59</b>	<b>-1.04</b>	<b>-1.18</b>	<b>0</b>	<b>-0.52</b>

Source : Field Survey

**Figure 8.5: Percentage of Change in Children Immunized by Various Functionaries in Sample Habitations**



Source: Figures generated from Table 8.5

In the control habitations of Tamil Nadu immunization of children aged up to 5 years has increased after the implementation of PMGSY road and the increase is 2.33 percent. This increase is only in the control habitations of Tirunelveli district Immunization of children is decreased in the control habitations of Salem and Tiruvannamalai districts. *Refer Table 8.5 (a)*

**Table 8.5 (a). Changes in Status of immunization of children in the control habitations during the period**

S. No.	District	% change of children aged 5 years or younger in the habitations immunized	% change of children aged 5 years or younger in the habitations immunized				
			Govt. Doctor/ Health worker/ Nurse in the village	Govt. Doctor/ Nurse outside the village	School/ Anganwadi in the village	Quack/ Chemist in the village	Others in the village
1	Salem	0	8.18	12.98	-25.71	0	4.55
2	Tirunelveli	8.33	3.33	8.33	-3.33	0	0
3	Tiruvannamalai	0	9.53	1.19	-19.04	0	8.33
<b>Tamilnadu</b>		<b>2.3</b>	<b>10.92</b>	<b>7.73</b>	<b>-20.9</b>	<b>0</b>	<b>4.55</b>

Source : Field Survey

In the sample habitations of Tamil Nadu 2.36 percent of children were not immunized before PMGSY road. Out of that 0.26 percent of the children were not immunized because the family was not aware about the immunization, 1.31 percent were not immunized because they were not considered it as a necessary thing, 0.26 percent were not immunized because the hospital /health centre was very far and 0.52 percent were not immunized because of other reasons. But after PMGSY road become operative the percentage of children not immunized is decreased and it is only 1.52 percent. Out of that 1.02 percent was not immunized because they were not considered it as a necessary thing and 0.51 percent were not immunized because of other reasons. *Refer Table 8.6.*

In the sample habitations of Salem district 2.44 percent of children were not immunized before PMGSY road. Out of that 1.22 percent of the children were not immunized because they were not considered it as a necessary thing, 0.61 percent were not immunized because the hospital /health centre was very far and 0.61 percent were not immunized because of other reasons. But after PMGSY road become operative the percentage of children not immunized is decreased to zero. In the sample habitations of Tirunelveli district 4.08 percent of children were not immunized before PMGSY road.

Out of that 1.02 percent of the children were not immunized because the family was not aware about the immunization, 2.04 percent were not immunized because they were not considered it as a necessary thing and 1.02 percent were not immunized because of other reasons. But after PMGSY road become operative the percentage of children not immunized is decreased to 2.86 percent and this is because of other reasons. In the sample habitations of Tiruvannamalai district 0.84 percent of children were not immunized before PMGSY road because they were not considered it as a necessary thing. But after PMGSY road become operative the percentage of children not immunized is increased to 3.64 percent and this is because they were not considered it as a necessary thing.

**Table 8.6 Children were not immunized in sample habitations before and after PMGSY road**

District	% of children were not immunized in the households before PMGSY road	% of children were not immunized in the households before PMGSY road due to					% of children were not immunized in the households after PMGSY road	% of children were not immunized in the households after PMGSY road due to				
		Family was not aware	Was not considered necessary	Hospital/ Health Center was very far	Family could not afford the cost	Other reasons		Family was not aware	Was not considered necessary	Hospital/ Health Center was very far	Family could not afford the cost	Other reasons
Salem	2.44	0	1.22	0.61	0	0.61	0	0	0	0	0	0
Tirunelveli	4.08	1.02	2.04	0	0	1.02	2.86	0	0	0	0	2.86
Tiruvannamalai	0.84	0	0.84	0	0	0	3.64	0	3.64	0	0	0
<b>Tamilnadu</b>	<b>2.36</b>	<b>0.26</b>	<b>1.31</b>	<b>0.26</b>	<b>0</b>	<b>0.52</b>	<b>1.52</b>	<b>0</b>	<b>1.02</b>	<b>0</b>	<b>0</b>	<b>0.51</b>

Source : Field Survey

## Chapter 9

### Impact on Education

This chapter describes the impact of PMGY roads on the educational facilities of the sample habitations of Tamil Nadu.

#### 9.1. Improved Status of Education Facilities

In the surveyed habitations of Tamil Nadu, after the implementation of PMGSY road 15.56 percent of the habitations reported increase in number of anganwadi centers, 6.67 percent of habitations reported increase in number of schools, 13.33 percent of habitations reported sufficient number of teachers in the schools and 2.22 percent of habitations reported regular provision of mid-day meals for the students. *Refer Table 9.1.*

After the PMGSY road become operative, increase in number of anganwadi centers is reported by 26.67 percent of habitations in Salem district, 13.33 percent of habitations in Tirunelveli district and 6.67 percent of habitations in Tiruvannamalai district. Increase in number of schools is reported by 6.67 percent of habitations in Salem district and 13.33 percent of habitations in Tiruvannamalai district. Sufficient number of teachers in the schools is reported by 20 percent of habitations in Salem district. Regular provision of mid-day meals for the students is reported by 6.67 percent of habitations in Salem district.

**Table 9.1. Change in status of education facilities within the surveyed sample habitations before and after PMGSY Road**

<i>(% of habitations)</i>						
S. No.	District	No. of Habitations Covered	Reported increase in number of anganwadi centers	Reported increase in number of schools	Reported having sufficient teaching staff in the schools	Reported having regular provision of mid-day meals for the students
1	Salem	15	26.67	6.67	20	6.67
2	Tirunelveli	15	13.33	0	0	0
3	Tiruvannamalai	15	6.67	13.33	20	0
<b>Tamilnadu</b>		<b>45</b>	<b>15.56</b>	<b>6.67</b>	<b>13.33</b>	<b>2.22</b>

Source : Field Survey

In the control habitations of Tamil Nadu, during the period no habitations reported increase in number of anganwadi centers, schools, teachers and regular provision of mid-day meal for the students. *Refer Table 9.1 (a).*

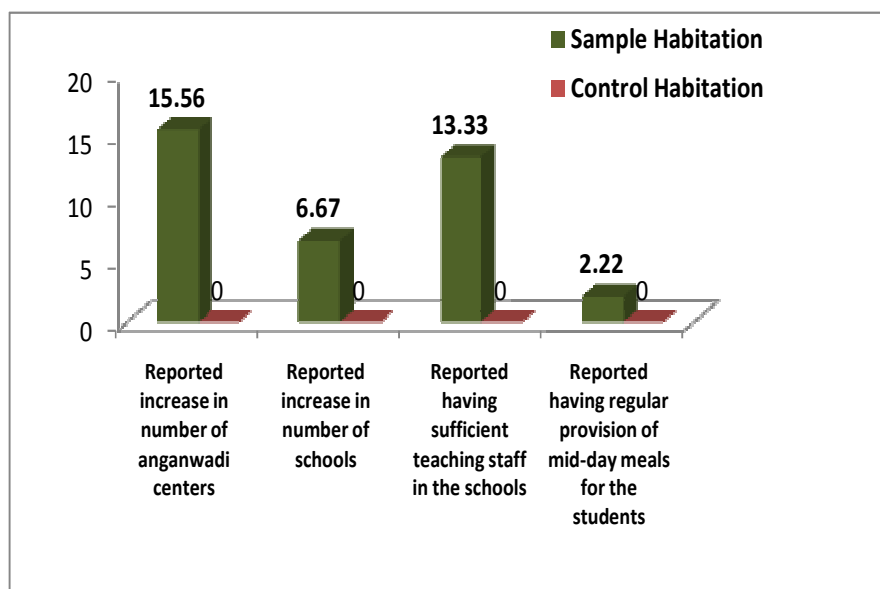
**Table 9.1(a) Change in status of education facilities within the surveyed control habitations during the period**

*(% of habitations)*

S. No.	District	No. of Habitations Covered	Reported increase in number of anganwadi centers	Reported increase in number of schools	Reported having sufficient teaching staff in the schools	Reported having regular provision of mid-day meals for the students
1	Salem	5	0	0	0	0
2	Tirunelveli	5	0	0	0	0
3	Tiruvannamalai	5	0	0	0	0
<b>Tamilnadu</b>		<b>15</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

Source : Field Survey

**Figure 9.1: Comparison of Changes in Education Facilities in Sample & Control Habitations**



Source: Figures generated from Tables 9.1 & 9.1 (a)



## **9.2. Improved All Seasons Connectivity of Education Facilities**

After the PMGSY road become operative in the sample habitations of Tamil Nadu, it is reported that all weather pucca road is available in 60 percent of habitations to nearest anganwadi center, in 62.22 percent of habitations to nearest primary school, in 73.33 percent of habitations to nearest secondary school, 71.11 percent of habitations to nearest higher secondary school, in 66.67 percent of habitations to nearest college/university and in 64.44 percent of habitations to nearest vocational training institute. *Refer Table 9.2.*

All weather pucca road connectivity is available to nearest anganwadi centre in 86.67 percent of habitations in Salem district, 46.67 percent of habitations in Tirunelveli district and 46.67 percent of habitations in Tiruvannamalai district. All seasons connectivity is available to nearest primary school in 93.33 percent of habitations in Salem district, 33.33 percent of habitations in Tirunelveli district and 60 percent of habitations in Tiruvannamalai district. Pucca road is available to nearest secondary school in 93.33 percent of habitations in Salem district, 73.33 percent of habitations in Tirunelveli district and 53.33 percent of habitations in Tiruvannamalai district. All weather pucca road is available to nearest higher secondary school in 93.33 percent of habitations in Salem district, 73.33 percent of habitations in Tirunelveli district and 46.67 percent of habitations in Tiruvannamalai district. Pucca road is available in all seasons to nearest college/ university in 93.33 percent of habitations in Salem district, 73.33 percent of habitations in Tirunelveli district and 33.33 percent of habitations in Tiruvannamalai district. All seasons connectivity is provided to nearest vocational training institute in 93.33 percent of habitations in Salem district, 73.33 percent of habitations in Tirunelveli district and 26.67 percent of habitations in Tiruvannamalai district.

**Table 9.2. Change in connectivity status to education centers from sample habitations after PMGSY Road**

District	No. of Habitations Covered	% of habitations reported availability of all weather pucca road connectivity					
		Nearest Anganwadi center	Nearest Primary School	Nearest Secondary School	Nearest Higher Secondary School	Nearest Degree College/ University	Nearest Vocational Training Institute
Salem	15	86.67	93.33	93.33	93.33	93.33	93.33
Tirunelveli	15	46.67	33.33	73.33	73.33	73.33	73.33
Tiruvannamalai	15	46.67	60	53.33	46.67	33.33	26.67
<b>Tamilnadu</b>	<b>45</b>	<b>60</b>	<b>62.22</b>	<b>73.33</b>	<b>71.11</b>	<b>66.67</b>	<b>64.44</b>

Source : Field Survey

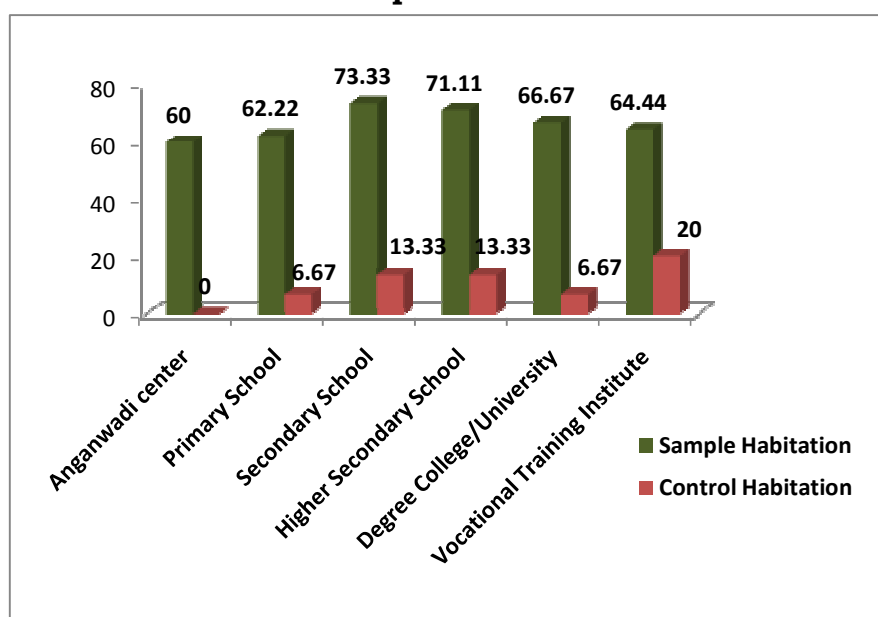
In the case of control habitations of Tamil Nadu all weather pucca road is available in 6.67 percent of habitations to nearest primary school, in 13.33 percent of habitations to nearest secondary school, 13.33 percent of habitations to nearest higher secondary school, in 6.67 percent of habitations to nearest college/university and in 20 percent of habitations to nearest vocational training institute. *Refer Table 9.2 (a).*

**Table 9.2 (a) Status of connectivity to education centers from control habitations now**

District	No. of Habitations Covered	% of habitations reported availability of all weather pucca road connectivity					
		Nearest Anganwadi center	Nearest Primary School	Nearest Secondary School	Nearest Higher Secondary School	Nearest Degree College/ University	Nearest Vocational Training Institute
Salem	5	0	20	20	20	20	20
Tirunelveli	5	0	0	0	0	0	0
Tiruvannamalai	5	0	0	20	20	0	40
<b>Tamilnadu</b>	<b>15</b>	<b>0</b>	<b>6.67</b>	<b>13.33</b>	<b>13.33</b>	<b>6.67</b>	<b>20</b>

Source : Field Survey

**Figure 9.2: Comparison of All Weather Road Connectivity to Education Facilities in Sample & Control Habitations**



Source: Figures generated from Tables 9.2 & 9.2 (a)

### 9.3. Changes in Access to Education Facilities

This part deals with the access to educational facilities by the children in the sample habitations before and after PMGSY road. It also describes the distance traveled and time taken to reach the children in the educational institution.

#### 9.3.1. Access to Educational Institution

In the surveyed habitations of Tamil Nadu, percentage of children having access to primary school before PMGSY road was 98.01 and after PMGSY road it is increased to 98.84 percent. Children having access to secondary school before PMGSY road was 94.94 percent and after PMGSY road it is increased to 98.14 percent. But the children having access to higher secondary school has reduced from cent percent to 89.19 percent. The percentage of students having access to college is cent percent in the pre and post PMGSY periods. *Refer Table 9.3.*

Children having access to primary school before PMGSY road was 95.59 percent in Salem district, cent percent in Tirunelveli district & 99.05 percent in Tiruvannamalai district and after PMGSY road become operative it become 97.3 percent in Salem district, cent percent in Tirunelveli & Tiruvannamalai districts. Children having access to secondary school before PMGSY road was 85.71 percent in Salem district, 95.24 percent in Tirunelveli district and 98.11 percent in Tiruvannamalai district and after PMGSY road it is increased to 96.91 percent in Salem district, cent percent in Tirunelveli & Tiruvannamalai districts. The children having access to higher secondary school and college before PMGSY road was zero percent and after PMGSY road it is increased to 71.43 percent and cent percent respectively. In Tirunelveli and Tiruvannamalai districts children having access to higher secondary school and college is cent percent before and after PMGSY road.

**Table 9.3 All Season access to education for children in the households of sample habitations before and after PMGSY road**

(% of children of eligible age )

District	No. of Households Covered	Primary school		Secondary school		Higher/sr. secondary school		College	
		Before	After	Before	After	Before	After	Before	After
Salem	375	95.59	97.3	85.71	96.91	0	71.43	0	100
Tirunelveli	375	100	100	95.24	100	100	100	100	100
Tiruvannamalai	375	99.05	100	98.11	100	100	100	100	100
<b>Tamilnadu</b>	<b>1125</b>	<b>98.01</b>	<b>98.84</b>	<b>94.94</b>	<b>98.14</b>	<b>100</b>	<b>89.19</b>	<b>100</b>	<b>100</b>

Source : Field Survey

In the control habitations of Tamil Nadu, percentage of children having access to primary, secondary and higher secondary school is cent percent in the previous and current periods. The percentage of students having access to college is zero percent in the previous period and in the current period it becomes cent percent. *Refer Table 9.3 (a).*

**Table 9.3 (a) All Season access to education for children in the households of control habitations during the period**

(% of children of eligible age )

District	No. of Households Covered	Primary school		Secondary school		Higher/sr. secondary school		College	
		Previous Period	Current Period	Previous Period	Current Period	Previous Period	Current Period	Previous Period	Current Period
Salem	125	100	100	100	100	100	100	0	100
Tirunelveli	124	100	100	100	100	100	100	0	0
Tiruvannamalai	125	100	100	100	100	100	100	0	100
<b>Tamilnadu</b>	<b>374</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>0</b>	<b>100</b>

Source : Field Survey

### 9.3.2. Distance Traveled

In the sample habitations of Tamil Nadu after the implementation of PMGSY road distance traveled by children to educational institution is increased. This is because after PMGSY road children can go to distant educational institutions for better educational facilities. Distance traveled by children to reach primary school before PMGSY road is 5.31 Km and after PMGSY road it is increased to 8.333 Km. Distance traveled to reach secondary school is decreased from 6.17 Km to 6.14 Km. Distance traveled to reach higher secondary school is increased from 6.571 Km to 13.278 Km. Distance traveled to reach college has increased from 12 Km to 36.6 Km.

Distance traveled to reach primary school in Salem, Tirunelveli & Tiruvannamalai districts before PMGSY road was 6.184 Km, 5.917 Km and 1.795 Km respectively and after PMGSY road become operative it is increased to 9.564 Km, 6.947 Km and 4.273 Km respectively. Distance traveled to reach secondary school in Salem, Tirunelveli & Tiruvannamalai districts before PMGSY road was 7.158 Km, 6.132 Km and 5.316 Km respectively and after PMGSY road it become 5.646 Km, 7 Km and 6.25 Km respectively. Distance traveled to reach higher secondary school in Salem, Tirunelveli & Tiruvannamalai districts before PMGSY road was 0 Km, 7 Km and 5.5 Km respectively and after PMGSY road become operative it is increased to 21.357 Km, 8.048 and 10 Km respectively. Distance traveled to reach college in Salem, Tirunelveli & Tiruvannamalai districts before PMGSY

road was 0 Km, 12 Km and 0 Km respectively and after PMGSY road become operative it is increased to 86.667 Km, 15.167 Km and 15 Km respectively.

*Refer Table 9.4.*

**Table 9.4. Change in access to education for children in the households of sample habitations**

District	No. of Households Covered	Average distance travelled by children of eligible age to reach the							
		Primary school		Secondary school		Higher/sr. secondary school		College	
		Before	After	Before	After	Before	After	Before	After
Salem	375	6.184	9.564	7.158	5.646	0	21.357	0	86.667
Tirunelveli	375	5.917	6.947	6.132	7	7	8.048	12	15.167
Tiruvannamalai	375	1.795	4.273	5.316	6.25	5.5	10	0	15
<b>Tamilnadu</b>	<b>1125</b>	<b>5.31</b>	<b>8.333</b>	<b>6.17</b>	<b>6.14</b>	<b>6.571</b>	<b>13.278</b>	<b>12</b>	<b>36.6</b>

Source : Field Survey

In the control habitations of Tamil Nadu, distance traveled by children to reach primary school in the previous period was 3.075 Km and in the current period it is increased to 4.457 Km. Distance traveled to reach secondary school is increased from 5.419 Km to 8.817 Km. Distance traveled to reach higher secondary school is increased from 6.214 Km to 11.595 Km. Distance traveled to reach college has increased from 0 Km to 9.667 Km. *Refer Table 9.4 (a).*

**Table 9.4 (a) Change in access to education for children in the households of control habitations during the period**

District	No. of Households Covered	Average distance travelled by children of eligible age to reach the							
		Primary school		Secondary school		Higher/sr. secondary school		College	
		Previous Period	Current Period	Previous Period	Current Period	Previous Period	Current Period	Previous Period	Current Period
Salem	125	2.5	3.321	5.065	5.038	2.833	15.269	0	8
Tirunelveli	124	8.6	10.2	6.182	5.643	6.5	5.8	0	0
Tiruvannamalai	125	0	1.25	5.333	15.95	11	5.333	0	13
<b>Tamilnadu</b>	<b>374</b>	<b>3.075</b>	<b>4.457</b>	<b>5.419</b>	<b>8.817</b>	<b>6.214</b>	<b>11.595</b>	<b>0</b>	<b>9.667</b>

Source : Field Survey

### **9.3.3. Travel Time**

Since the distance traveled by children to reach educational institution increases after PMGSY road, the time taken to the travel also increases. In the sample habitations of Tamil Nadu, average travel time taken by the children to reach primary school before PMGSY road is 25 minutes and after PMGSY road it is increased to 33 minutes. Average travel time taken by the children to reach secondary school before PMGSY road is 27 minutes and after PMGSY road it is increased to 31 minutes. Average travel time taken by the children to reach higher secondary school before PMGSY road is 30 minutes and after PMGSY road it is increased to 46 minutes. Average travel time taken by the children to reach college before PMGSY road is 60 minutes and after PMGSY road it is increased to 82 minutes.

Average travel time taken by the children to reach primary school before PMGSY road is 29 minutes, 21 minutes & 16 minutes in Salem, Tirunelveli & Tiruvannamalai districts and after PMGSY road it is increased to 39 minutes, 25 minutes and 17 minutes respectively. Average travel time taken by the children to reach secondary school before PMGSY road is 35 minutes, 25 minutes & 29 minutes in Salem, Tirunelveli & Tiruvannamalai districts and after PMGSY road it is changed to 34 minutes, 27 minutes and 31 minutes respectively. Average travel time taken to reach higher secondary school and college in Salem & colleges in Tiruvannamalai before PMGSY road is not reported by the respondents, but after PMGSY road it is reported as 72 minutes, 160 minutes in Salem and 60 and 90 minutes in Thiruvannamalai District respectively. Travel time taken to reach higher secondary school before PMGSY road in Tirunelveli & Tiruvannamalai district was 34 minutes & 20 minutes and after PMGSY road it is changed to 28 minutes & 60 minutes respectively. Time taken to reach college in Tirunelveli district before PMGSY road is 60 minutes and after PMGSY road it is decreased to 42 minutes.

**Table 9.5 Change in access to education for children in the households of sample habitations**

District	No. of Households Covered	Average travel time taken by children of eligible age to reach							
		Primary school		Secondary school		Higher/sr. secondary school		College	
		Before	After	Before	After	Before	After	Before	After
Salem	375	29	39	35	34	0	72	0	160
Tirunelveli	375	21	25	25	27	34	28	60	42
Tiruvannamalai	375	16	17	29	31	20	60	0	90
<b>Tamilnadu</b>	<b>1125</b>	<b>25</b>	<b>33</b>	<b>27</b>	<b>31</b>	<b>30</b>	<b>46</b>	<b>60</b>	<b>82</b>

Source : Field Survey

In the control habitations of Tamil Nadu, average travel time taken by the children to reach primary school during previous period is 19 minutes and in the current period it is increased to 20 minutes. Average travel time taken by the children to reach secondary school during previous period is 24 minutes and in the current period it is increased to 26 minutes. Average travel time taken by the children to reach higher secondary school during previous period is 24 minutes and in the current period it is increased to 39 minutes. Average travel time taken by the children to reach college during previous period is not reported and in the current period it is 33 minutes.

*Refer Table 9.5 (a).*

**Table 9.5 (a) Change in access to education for children in the respondent households of control habitations during the period**

District	No. of Households Covered	Average travel time taken by children of eligible age to reach							
		Primary school		Secondary school		Higher/sr. secondary school		College	
		Previous Period	Current Period	Previous Period	Current Period	Previous Period	Current Period	Previous Period	Current Period
Salem	125	18	16	22	25	30	45	0	35
Tirunelveli	124	27	34	27	30	18	34	0	0
Tiruvannamalai	125	0	14	23	25	22	23	0	30
<b>Tamilnadu</b>	<b>374</b>	<b>19</b>	<b>20</b>	<b>24</b>	<b>26</b>	<b>24</b>	<b>39</b>	<b>0</b>	<b>33</b>

Source : Field Survey



#### **9.4. Improvements in Enrollment of Children for Education**

After the implementation of PMGSY road, enrollment of children in educational institutions is increased significantly. In the sample habitations of Tamil Nadu, before PMGSY road enrollment in primary school is 90.57 percent for boys & 87.85 percent for girls and after PMGSY road it is increased to 97.89 percent & 96.34 percent respectively. Enrollment in secondary school before PMGSY road is 86.49 percent for boys & 84.93 percent for girls and after PMGSY road it is increased to 88.54 percent & 92.68 percent respectively. Enrollment in higher secondary school before PMGSY road is 72.73 percent for boys & 60 percent for girls and after PMGSY road it is increased to 92.59 percent & 70.59 percent respectively. Enrollment in college before PMGSY road is 40 percent for boys & zero percent for girls and after PMGSY road it is increased to 77.78 percent & cent percent respectively.

In the sample habitations of Salem district enrollment in primary school before PMGSY road is 88.51 percent for boys & 84.29 percent for girls and after PMGSY road it is increased to 96.15 percent & 97.33 percent respectively. Enrollment in secondary school before PMGSY road is 73.68 percent for boys & 46.67 percent for girls and after PMGSY road it is increased to 84.75 percent & 95.92 percent respectively. Enrollment in higher secondary school before PMGSY road is zero percent for boys & girls and after PMGSY road it is increased to 90 percent & 62.5 percent respectively. Enrollment in college before PMGSY road is zero percent for boys & girls and after PMGSY road it is increased to cent percent.

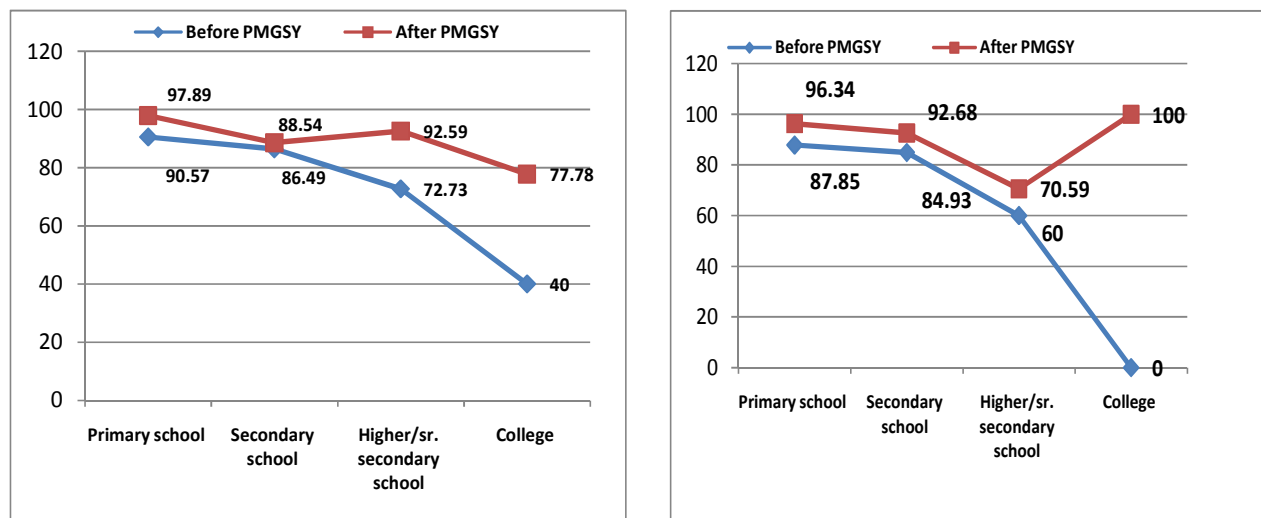
In the sample habitations of Tirunelveli district enrollment in primary school before PMGSY road is 89.39 percent for boys & 89.47 percent for girls and after PMGSY road it is increased to cent percent & 93.33 percent respectively. Enrollment in secondary school before PMGSY road is 89.66 percent for boys & 91.43 percent for girls and after PMGSY road it is changed to 93.33 percent & 88.89 percent respectively. Enrollment in

higher secondary school before PMGSY road is 71.43 percent for boys & zero percent for girls and after PMGSY road it is increased to 93.75 percent & 75 percent respectively. Enrollment in college before PMGSY road is 50 percent for boys & zero percent for girls and after PMGSY road it is increased to 83.33 percent & cent percent respectively.

In the sample habitations of Tiruvannamalai district enrollment in primary school before PMGSY road is 94.92 percent for boys & 90.74 percent for girls and after PMGSY road it is increased to 98.55 percent & 97.73 percent respectively. Enrollment in secondary school before PMGSY road is 88.24 percent for boys & cent percent for girls and after PMGSY road it is changed to cent percent & 83.33 percent respectively. Enrollment in higher secondary school before PMGSY road is 75 percent for boys & cent percent for girls and after PMGSY road it is increased to cent percent. Enrollment in college before PMGSY road is 33.33 percent for boys & zero percent for girls and after PMGSY road it is changed to zero percent & cent percent respectively. *Refer table A.11 in Appendix.*

After the implementation of PMGSY road, number of students going outside the village for higher education also increases. Out of the 45 habitations of Tamil Nadu, in 95.56 percent of habitations there is an increase in number of children going to school, increase in number of girls going to school, increase in number of children going outside the village for higher education and enhanced overall literacy levels due to better access and improved communications. In 93.33 percent of habitations there is an improvement in attendance of students in the nearby schools during all seasons and families are willing to send girls for higher education. *Refer Table 9.6.*

**Figure 9.3: Percentage of Children Enrolled at Various Levels Before and After PMGSY in Sample Habitations**  
**Male** **Female**



Source : Figures generated from Table A.11 in Appendix

**Table 9.6. Change in education status of residents of surveyed sample habitations due to better road connectivity after PMGSY Road**

(% of habitations reported)

District	No. of Habitations Covered	Increase in number of children going to schools	Increase in number of girls going to schools	Increase in number of children going outside the village for higher education	Enhanced overall literacy levels due to better access and improved communications	Improvement in attendance of students from the habitation in the nearby schools during all seasons	Where families willing to send more of there girls for higher schools now
Salem	15	100	100	100	93.33	86.67	93.33
Tirunelveli	15	86.67	86.67	86.67	93.33	93.33	86.67
Tiruvannamalai	15	100	100	100	100	100	100
<b>Tamilnadu</b>	<b>45</b>	<b>95.56</b>	<b>95.56</b>	<b>95.56</b>	<b>95.56</b>	<b>93.33</b>	<b>93.33</b>

Source : Field Survey

## **Chapter 10**

### **Impact on Other Aspects**

#### **10.1. Improved Living Conditions and Security**

After the implementation of PMGSY road in the sample habitations Tamil Nadu, more families constructed pucca houses in 86.67 percent of habitations. On an average 12 houses were constructed during last 12 months period. In 77.78 percent of habitations more families constructed sanitary latrines. On an average 14 latrines were constructed during last 12 months period. In 95.56 percent of habitations persons traveling outside the habitation for cultural visits and in 53.33 percent of habitations NGOs/VOs visits to the habitation increases. In 51.11 percent of habitations visit to the habitation by representatives of various organizations and police patrolling increases. *Refer Table 10.1.*

More families constructed pucca houses in 86.67 percent of habitations in Salem district, 73.33 percent of habitations in Tirunelveli district and cent percent of habitations in Tiruvannamalai district. On an average, during last 12 months period 14 houses were constructed in Salem district, 11 houses were constructed in Tirunelveli and Tiruvannamalai districts. More families constructed sanitary latrines in 60 percent of habitations in Salem district, 80 percent of habitations in Tirunelveli district and 93.33 percent of habitations in Tiruvannamalai district. On an average, during last 12 months period 19 latrines were constructed in Salem district, 17 latrines were constructed in Tirunelveli district and 9 latrines were constructed in Tiruvannamalai district. There is an increase in traveling by persons outside the habitation for cultural visits in cent percent of habitation in Tiruvannamalai district and 93.33 percent of habitations in Salem & Tirunelveli districts. Visits to the habitation by NGOs/VOs increases in 46.67 percent of habitations in Salem district, in 40 percent of habitations in Tirunelveli district and in 73.33 percent of habitations in Tiruvannamalai district. Visits to the habitation by representatives of various organization

increases in 26.67 percent of habitations in Salem district, in 53.33 percent of habitations in Tirunelveli district and in 73.33 percent of habitations in Tiruvannamalai district. Police patrolling increased after PMGSY road in 20 percent of habitations in Salem district, 73.33 percent of habitations in Tirunelveli district and 60 percent of habitations in Tiruvannamalai district.

**Table 10.1. Improvements/changes in the living condition and security of sample habitations after PMGSY Road**

(*% of habitations*)

District	No. of Habitations Covered	Where more families constructed pucca house	Avg. no. of pucca houses constructed during last 12 months	Where more families constructed sanitary latrines	Average no. of sanitary latrines constructed during last 12 months	where visits to the habitation increases			
						Persons travelling outside the habitation for cultural visit	NGOS/ VOs visiting	Representatives of various organizations	Police patrolling
Salem	15	86.67	14	60	19	93.33	46.67	26.67	20
Tirunelveli	15	73.33	11	80	17	93.33	40	53.33	73.33
Tiruvannamalai	15	100	11	93.33	9	100	73.33	73.33	60
<b>Tamilnadu</b>	<b>45</b>	<b>86.67</b>	<b>12</b>	<b>77.78</b>	<b>14</b>	<b>95.56</b>	<b>53.33</b>	<b>51.11</b>	<b>51.11</b>

Source : Field Survey

In the control habitations of Tamil Nadu more families constructed pucca houses in 73.33 percent of control habitations during the period. On an average 17 houses were constructed during last 12 months period. In 53.33 percent of control habitations more families constructed sanitary latrines. On an average 13 latrines were constructed during last 12 months period. In 73.33 percent of control habitations persons traveling outside the habitation for cultural visits and in 26.67 percent of habitations NGOs/VOs visits to the control habitation increases. In 26.67 percent of control habitations visit to the habitation by representatives of various organizations and police patrolling increases. *Refer Table 10.1 (a).*

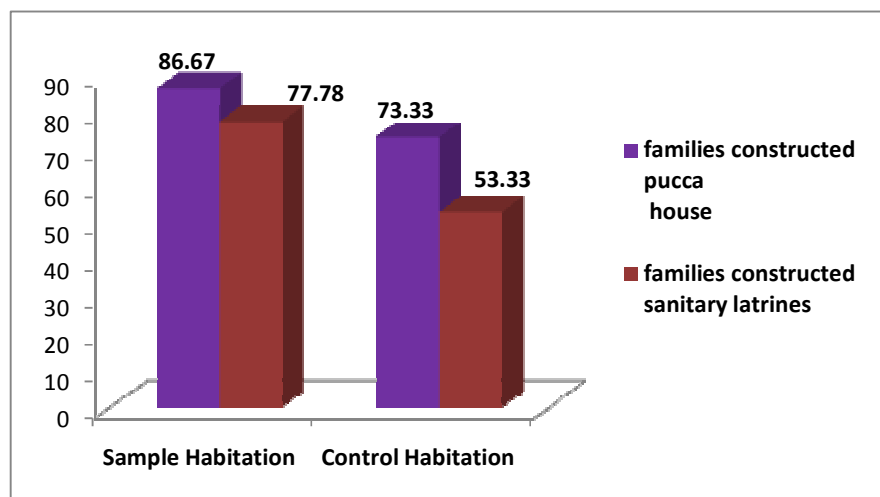
**Table 10.1 (a) Improvements/changes in the living condition and security of control habitations during the period**

(% of habitations)

District	No. of Habitations Covered	Where more families constructed pucca house	Avg. no. of pucca houses constructed during last 12 months	Where more families constructed sanitary latrines	Average no. of sanitary latrines constructed during last 12 months	where visits to the habitation increases			
						Persons travelling outside the habitation for cultural visit	NGOS/ VOs visiting	Representatives of various organizations	Police patrolling
Salem	5	60	15	40	12	40	0	0	0
Tirunelveli	5	100	24	80	15	100	60	40	40
Tiruvannamalai	5	60	9	40	8	80	40	40	40
<b>Tamilnadu</b>	<b>15</b>	<b>73.33</b>	<b>17</b>	<b>53.33</b>	<b>13</b>	<b>73.33</b>	<b>33.33</b>	<b>26.67</b>	<b>26.67</b>

Source : Field Survey

**Figure 10.1: Changes in the Living Conditions after PMGSY in Sample & Control Habitations**



Source: Figures generated from Tables 10.1 & 10.1 (a)

## 10.2. Improved Connectivity to Various Administrative Centers

PMGSY roads have provided better connectivity to various administrative centers and reduced the travel time to reach these centers. In the surveyed habitations of Tamil Nadu better connectivity is reported by 75.56 percent of habitations to gram panchayat, 77.78 percent of habitations to block panchayat, 77.78 percent of habitations to district head quarters and 77.78

percent of habitations to local police station. Reduction in travel time is reported by 44.44 percent of habitations to reach gram panchayat, 51.11 percent of habitations to reach block panchayat, 55.56 percent of habitations to reach district head quarters and 42.22 percent of habitations to reach local police station. *Refer Table 10.2.*

In the sample habitations of Salem district cent percent of habitations reported better connectivity to gram panchayat, block panchayat, district head quarters and local police station. Reduction in travel time is reported by 73.33 percent of habitations to reach gram panchayat, 60 percent of habitations to reach local police station and 80 percent of habitations to reach block panchayat & district head quarters. In the sample habitations of Tirunelveli district better connectivity is reported by 60 percent of habitations to gram panchayat, 73.33 percent of habitations to district head quarters and 80 percent of habitations to block panchayat & local police station. Reduction in travel time is reported by 33.33 percent of habitations to reach gram panchayat, 46.67 percent of habitations to reach block panchayat, 60 percent of habitations to reach district head quarters and 53.33 percent of habitations to reach local police station. In the sample habitations of Tiruvannamalai district better connectivity is reported by 66.67 percent of habitations to gram panchayat, 60 percent of habitations to district head quarters and 53.33 percent of habitations to block panchayat & local police station. Reduction in travel time is reported by 26.67 percent of habitations to reach gram panchayat, block panchayat, district head quarters and 13.33 percent of habitations to reach local police station.

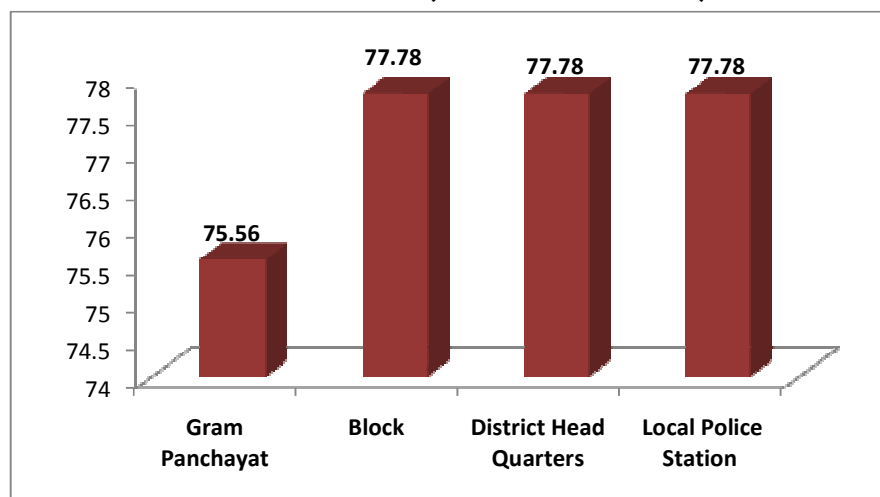
**Table 10.2. Improvement in connectivity to various administrative centers from sample habitations after PMGSY Road**

*(% of habitations)*

District	No. of Habitations Covered	Reported better connectivity to				Reported reduction in travel time to reach			
		Gram Panchayat	Block	District Head Quarters	Local Police Station	Gram Panchayat	Block	District Head Quarters	Local Police Station
Salem	15	100	100	100	100	73.33	80	80	60
Tirunelveli	15	60	80	73.33	80	33.33	46.67	60	53.33
Tiruvannamalai	15	66.67	53.33	60	53.33	26.67	26.67	26.67	13.33
<b>Tamilnadu</b>	<b>45</b>	<b>75.56</b>	<b>77.78</b>	<b>77.78</b>	<b>77.78</b>	<b>44.44</b>	<b>51.11</b>	<b>55.56</b>	<b>42.22</b>

Source : Field Survey

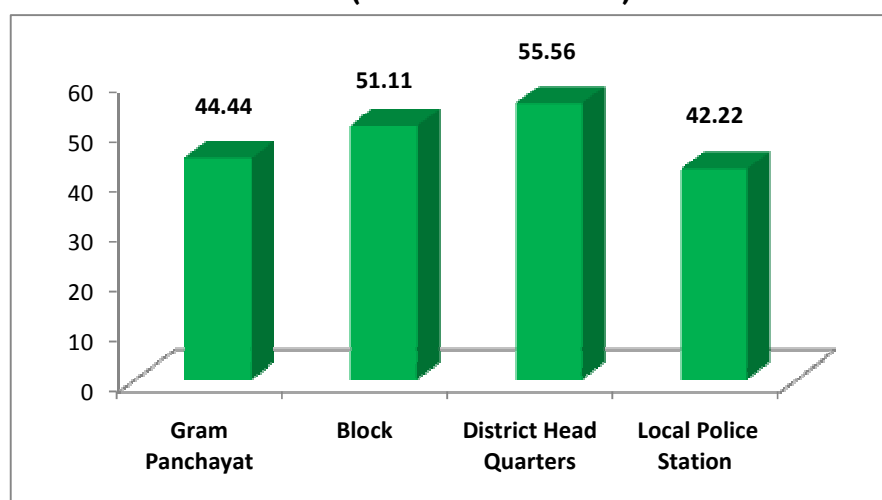
**Figure 10.2: Improvement in Connectivity to Various Offices after PMGSY (% of Habitations)**



Source: Figures generated from Tables 10.2



**Figure 10.3: Reduction in Travel Time to Various Offices after PMGSY  
(% of Habitations)**



Source: Source: Figures generated from Tables 10.2

### **10.3. Improvements in Public Distribution System (PDS)**

After the PMGSY road become operative in the sample habitations of Tamil Nadu, 4.44 percent of habitations reported increases in number of ration shops and 2.22 percent of habitations reported increase in the accessing of ration shops outside the habitation. There is an increase in the households having ration cards in 88.89 percent of habitations. After PMGSY road, 86.67 percent of habitations reported increase in the quantity of wheat/rice distribution, 91.11 percent of habitations reported increase in the quantity of sugar and 82.22 percent of habitations reported increase in the quantity of kerosene oil.

Increase in the number of ration shops after PMGSY road is reported by 6.67 percent of habitations in Salem and Tiruvannamalai districts. Accessing of ration shops outside the habitation is increased in 6.67 percent of habitation in Tiruvannamalai district. Increase in the number of households holding ration card is reported by 73.33 percent of habitations in Salem district, 93.33 percent of habitations in Tirunelveli district and cent percent of habitations in Tiruvannamalai district. Increase in the quantity of wheat/rice distributed is reported by 86.67 percent of habitations in Salem, Tirunelveli and Tiruvannamalai districts. Increase in

the quantity of sugar distributed through ration shops is reported by 86.67 percent of habitations in Salem district and 93.33 percent of habitations in Tirunelveli & Tiruvannamalai districts. Increase in the quantity of kerosene is reported by 66.67 percent of habitations in Salem district, 93.33 percent of habitations in Tirunelveli district and 86.67 percent of habitations in Tiruvannamalai district. *Refer Table 10.3.*

**Table 10.3. Improvements/Changes in the status of PDS in sample habitations after PMGSY Road**

*(% of habitations Reported increase in )*

District	No. of Habitations Covered	No. of PDS shops	PDS shops outside accessed by the residents of habitation	Households holding ration cards	Increase in the quantity distributed to them		
					Wheat/ rice	Sugar	Kerosene oil
Salem	15	6.67	0	73.33	86.67	86.67	66.67
Tirunelveli	15	0	0	93.33	86.67	93.33	93.33
Tiruvannamalai	15	6.67	6.67	100	86.67	93.33	86.67
<b>Tamilnadu</b>	<b>45</b>	<b>4.44</b>	<b>2.22</b>	<b>88.89</b>	<b>86.67</b>	<b>91.11</b>	<b>82.22</b>

Source : Field Survey

In the case of control habitations of Tamil Nadu, 6.67 percent of habitations reported increase in the accessing of ration shops outside the habitation during the period. There is an increase in the households having ration cards in 86.67 percent of habitations. During the period, 86.67 percent of habitations reported increase in the quantity of kerosene and cent percent of habitations reported increase in the quantity of wheat/rice and sugar. *Refer Table 10.3 (a).*

**Table 10.3 (a) Changes/Improvements in the status of PDS in control habitations during the period**

*(% of habitations Reported increase in )*

District	No. of Habitations Covered	No. of PDS shops	PDS shops outside accessed by the residents of habitation	Households holding ration cards	Increase in the quantity distributed to them		
					Wheat/ rice	Sugar	Kerosene oil
Salem	5	0	0	60	100	100	80
Tirunelveli	5	0	20	100	100	100	100
Tiruvannamalai	5	0	0	100	100	100	80
<b>Tamilnadu</b>	<b>15</b>	<b>0</b>	<b>6.67</b>	<b>86.67</b>	<b>100</b>	<b>100</b>	<b>86.67</b>

Source : Field Survey

#### 10.4. Improvements in Rural Electrification

After the implementation of PMGSY road in the sample habitations of Tamil Nadu, increase in the number of electricity connection is reported by 93.33 percent of habitations for household purpose, 73.33 percent of habitations for agricultural purposes, 15.56 percent of habitations for industrial/commercial purposes and 88.89 percent of habitations for street lights.

In the sample habitations of Salem district increase in the number of electricity connection is reported by 20 percent of habitations for industrial/commercial purposes, 93.33 percent of habitations for household purpose, agricultural purposes and street light posts. In the sample habitations of Tirunelveli district increase in the number of electricity connection is reported by 86.67 percent of habitations for household purpose, 53.33 percent of habitations for agricultural purposes, 6.67 percent of habitations for industrial/commercial purposes and 80 percent of habitations for street lights. In the sample habitations of Tiruvannamalai district increase in the number of electricity connection is reported by cent percent of habitations for household purpose, 73.33 percent of habitations for agricultural purposes, 20 percent of habitations for industrial/commercial purposes and 93.33 percent of habitations for street lights. Refer Table 10.4.

**Table 10.4. Improvements in rural electrification programme in sample habitations after PMGSY Road**

*(% of habitations)*

S.No.	District	No. of Habitations Covered	Reported increase in no. of electricity connections			
			In households	For agriculture	Industrial/ Commercial	Of street light posts
1	Salem	15	93.33	93.33	20	93.33
2	Tirunelveli	15	86.67	53.33	6.67	80
3	Tiruvannamalai	15	100	73.33	20	93.33
<b>Tamilnadu</b>		<b>45</b>	<b>93.33</b>	<b>73.33</b>	<b>15.56</b>	<b>88.89</b>

Source : Field Survey

In the control habitations of Tamil Nadu, increase in the number of electricity connection is reported by 93.33 percent of habitations for household purpose, 40 percent of habitations for agricultural purposes, 26.67 percent of habitations for industrial/commercial purposes and 93.33 percent of habitations for street lights.

Increase in the number of electricity connection for household purposes is reported by 80 percent of control habitations in Tirunelveli district and cent percent of control habitations in Salem & Tiruvannamalai districts. Increase in the number of electricity connection for agricultural purposes is reported by 80 percent of control habitations in Tiruvannamalai district and 20 percent of control habitations in Salem & Tirunelveli districts. Increase in the number of electricity connection for industrial/commercial purposes is reported by 40 percent of control habitations in Salem district and 20 percent of control habitations in Tirunelveli & Tiruvannamalai districts. Increase in the number of electricity connection for street lights is reported by 80 percent of control habitations in Salem district and cent percent of control habitations in Tirunelveli & Tiruvannamalai districts. *Refer Table 10.4 (a).*

**Table 10.4(a) Improvements in rural electrification programme in control habitations during the period**

*(% of habitations)*

S.No.	District	No. of Habitations Covered	Reported increase in no. of electricity connections			
			In households	For agriculture	Industrial/ Commercial	Of street light posts
1	Salem	5	100	20	40	80
2	Tirunelveli	5	80	20	20	100
3	Tiruvannamalai	5	100	80	20	100
<b>Tamilnadu</b>		<b>15</b>	<b>93.33</b>	<b>40</b>	<b>26.67</b>	<b>93.33</b>

Source : Field Survey

# Appendix

Table A.1. Changes in public transport commuting services after PMGSY road was operative

(No. of habitations)

istrict	Habitations Covered	Change in no. of vehicles plying in and out of the habitation on weekly basis																			
		Buses					Auto Rickshaws					Jeep/Car					Other Vehicles				
		Nil to Nil	Nil to 1 or more	Same nos. as before	Increased nos.	Increased to double or more	Nil to Nil	Nil to 1 or more	Same nos. as before	Increased nos.	Increased to double or more	Nil to Nil	Nil to 1 or more	Same nos. as before	Increased nos.	Increased to double or more	Nil to Nil	Nil to 1 or more	Same nos. as before	Increased nos.	Increased to double or more
Salem	15	26.67	53.33	0	20	20	20	26.67	0	53.33	46.67	20	26.67	0	53.33	40	20	26.67	6.67	46.67	20
Tirunelveli	15	73.33	13.33	13.33	0	0	13.33	40	13.33	33.33	6.67	20	33.33	13.33	33.33	13.33	20	33.33	13.33	33.33	6.67
Tiruvannamalai	15	66.67	20	6.67	6.67	6.67	6.67	40	0	53.33	20	6.67	40	6.67	46.67	13.33	6.67	40	0	53.33	13.33
Tamilnadu	45	55.56	28.89	6.67	8.89	8.89	13.33	35.56	4.44	46.67	24.44	15.56	33.33	6.67	44.44	22.22	15.56	33.33	6.67	44.44	13.33

Table A.2. Changes in public transport commuting services over the period in Control Habitations

(No. of habitations)

District	Control Habitations Covered	Change in no. of vehicles plying in and out of the habitation on weekly basis																			
		Buses					Auto Rickshaws					Jeep/Car					Other Vehicles				
		Nil to Nil	Nil to 1 or more	Same nos. as before	Increased nos.	Increased to double or more	Nil to Nil	Nil to 1 or more	Same nos. as before	Increased nos.	Increased to double or more	Nil to Nil	Nil to 1 or more	Same nos. as before	Increased nos.	Increased to double or more	Nil to Nil	Nil to 1 or more	Same nos. as before	Increased nos.	Increased to double or more
Salem	5	0	0	60	40	0	0	0	60	40	20	0	0	80	0	0	0	0	80	0	0
Tirunelveli	5	100	0	0	0	0	40	20	0	40	0	20	20	0	60	0	20	20	0	60	0
Tiruvannamalai	5	60	40	0	0	0	0	20	0	80	20	0	20	20	60	40	0	20	0	80	80
Tamilnadu	15	53.33	13.33	20	13.33	0	13.33	13.33	20	53.33	13.33	6.67	13.33	33.33	40	13.33	6.67	13.33	26.67	46.67	26.67

Table A.3. Changes in public transport load carriage services after PMGSY road was operative

(No. of habitations)

District	Change in no. of vehicles plying in and out of the habitation on weekly basis																												
	Light Truck				Medium Truck					Heavy Truck					Pick-up truck/van					Tractor-Trolley					Other vehicles				
	Nil to Nil	Nil to 1 or more	Same nos. as before	Increased to double or more	Nil to Nil	Nil to 1 or more	Same nos. as before	Increased nos.	Increased to double or more	Nil to Nil	Nil to 1 or more	Same nos. as before	Increased nos.	Increased to double or more	Nil to Nil	Nil to 1 or more	Same nos. as before	Increased nos.	Increased to double or more	Nil to Nil	Nil to 1 or more	Same nos. as before	Increased nos.	Increased to double or more	Nil to Nil	Nil to 1 or more	Same nos. as before	Increased nos.	Increased to double or more
Salem	53.33	33.33	0	6.67	53.33	40	0	6.67	6.67	86.67	13.33	0	0	0	26.67	46.67	0	26.67	26.67	20	33.33	0	46.67	26.67	40	26.67	6.67	26.67	26.67
Tirunelveli	73.33	20	0	0	53.33	26.67	6.67	13.33	13.33	80	13.33	0	6.67	6.67	53.33	26.67	0	20	6.67	53.33	26.67	0	20	6.67	53.33	26.67	0	20	13.33
Tiruvannamalai	20	26.67	13.33	20	40	13.33	6.67	33.33	20	26.67	33.33	6.67	33.33	13.33	6.67	26.67	26.67	40	26.67	6.67	26.67	13.33	53.33	20	6.67	26.67	6.67	60	13.33
Tamilnadu	48.89	26.67	4.44	8.89	48.89	26.67	4.44	17.78	13.33	64.44	20	2.22	13.33	6.67	28.89	33.33	8.89	28.89	20	26.67	28.89	4.44	40	17.78	33.33	26.67	4.44	35.56	17.78

Table A.4. Changes in public transport load carriage services over the period in Control Habitations

(% of habitations)

District	Change in no. of vehicles plying in and out of the habitation on weekly basis																													
	Light Truck					Medium Truck					Heavy Truck					Pick-up truck/van					Tractor-Trolley					Other vehicles				
	Nil to Nil	Nil to 1 or more	Same nos. as before	Increased nos.	Increased to double or more	Nil to Nil	Nil to 1 or more	Same nos. as before	Increased nos.	Increased to double or more	Nil to Nil	Nil to 1 or more	Same nos. as before	Increased nos.	Increased to double or more	Nil to Nil	Nil to 1 or more	Same nos. as before	Increased nos.	Increased to double or more	Nil to Nil	Nil to 1 or more	Same nos. as before	Increased nos.	Increased to double or more	Nil to Nil	Nil to 1 or more	Same nos. as before	Increased nos.	Increased to double or more
Salem	20	0	20	60	20	20	0	40	40	0	20	0	60	20	20	20	0	40	40	0	20	0	40	20	0	40	0	20	20	0
Tirunelveli	20	0	0	80	20	20	0	0	60	20	60	0	20	20	20	40	0	0	60	0	40	0	20	40	0	20	0	0	60	20
Tiruvannamalai	40	20	0	40	40	40	20	20	20	20	60	20	0	20	20	20	20	0	60	40	20	20	0	60	20	0	20	0	80	40
Tamilnadu	26.67	6.67	6.67	60	26.67	26.67	6.67	20	40	13.33	46.67	6.67	26.67	20	20	26.67	6.67	13.33	53.33	13.33	26.67	6.67	20	40	6.67	20	6.67	6.67	53.33	20

**Table A.5. Change in access to facilities/services by farmers in sample habitations after the PMGSY Road**

*(% of households)*

S.No.	District	No. of households own agricultural land	Sourcing of Fertilizers/Pesticides		Sourcing of Improved Seeds		Access to farmers cooperative society and banking				Access to agricultural extension services		
			shifting to nearby market outside the habitation	shifting to distant market outside the habitation	shifting to nearby market outside the habitation	shifting to distant market outside the habitation	Acquired membership of farmers cooperative	holding bank account	availed agriculture loan	increase in amount of loan availed	increase in number of visits by agriculture extension workers	receiving improved seeds	receiving training/exposure visits
1	Salem	161	1.24	0.62	0.62	0	12.42	14.91	6.83	57.14	3.11	0	0
2	Tirunelveli	145	4.14	0.69	2.07	0.69	0	14.48	7.59	11.11	3.45	0	0
3	Tiruvannamalai	110	10	1.82	10.91	1.82	9.09	5.45	0	0	0	0	0
<b>Tamilnadu</b>		<b>416</b>	<b>4.57</b>	<b>0.96</b>	<b>3.85</b>	<b>0.72</b>	<b>7.21</b>	<b>12.26</b>	<b>5.29</b>	<b>24.32</b>	<b>2.4</b>	<b>0</b>	<b>0</b>

**Table A.6. Change in access to facilities-services by farmers in control households during the period**

*(% of households)*

S.No.	District	No. of households own agricultural land	Sourcing of Fertilizers/Pesticides		Sourcing of Improved Seeds		Access to farmers cooperative society and banking				Access to agricultural extension services		
			shifting to nearby market outside the habitation	shifting to distant market outside the habitation	shifting to nearby market outside the habitation	shifting to distant market outside the habitation	acquired membership of farmers cooperative during the current period	holding bank account during the current period	availed agriculture loan during the current period	increase in amount of loan availed during the current period	increase in number of visits by agriculture extension workers during the current period	receiving improved seeds during the current period	receiving training/exposure visits during the current period
1	Salem	16	0	0	0	0	6.25	6.25	12.5	0	0	0	0
2	Tirunelveli	20	0	0	0	0	0	0	5	0	0	0	0
3	Tiruvannamalai	26	0	7.69	0	3.85	0	0	0	0	0	0	0
<b>Tamilnadu</b>		<b>62</b>	<b>0</b>	<b>3.23</b>	<b>0</b>	<b>1.61</b>	<b>1.61</b>	<b>1.61</b>	<b>4.84</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

**Table A.7. Distribution of increase in employment opportunities for sample households after PMGSY Road (No. of days)**

S.No.	District	No. of HH Covered	% HH reported Increase in no. of days employment in principal occupation					% HH reported Increase in no. of days employment in other occupation					% HH reported Increase in total days employed				
			Upto 50	51 to 100	101 to 150	151 to 200	Above 200	Upto 50	51 to 100	101 to 150	151 to 200	Above 200	Upto 50	51 to 100	101 to 150	151 to 200	Above 200
1	Salem	375	25.33	5.07	2.13	0.53	1.07	0.27	0	0	0	0	25.6	5.07	2.13	0.53	1.07
2	Tirunelveli	375	21.33	3.47	1.33	1.33	0.27	0.8	0	0	0	0	21.33	3.73	1.33	1.33	0.27
3	Tiruvannamalai	375	5.33	2.4	0.53	0.27	0	0	0	0	0	0	5.33	2.4	0.53	0.27	0
<b>Tamilnadu</b>		<b>1125</b>	<b>17.33</b>	<b>3.64</b>	<b>1.33</b>	<b>0.71</b>	<b>0.44</b>	<b>0.36</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>17.42</b>	<b>3.73</b>	<b>1.33</b>	<b>0.71</b>	<b>0.44</b>

**Table A.8. Distribution of increase in employment opportunities for control households during the period (No. of days)**

*(% of households)*

S.No.	District	No. of Control HH Covered	Reported Increase in No. of days employment in principal occupation					Reported Increase in No. of days employment in other occupation					Reported Increase in total days employed				
			Upto 50	51 to 100	101 to 150	151 to 200	Above 200	Upto 50	51 to 100	101 to 150	151 to 200	Above 200	Upto 50	51 to 100	101 to 150	151 to 200	Above 200
1	Salem	125	3.2	2.4	0.8	0	0	0	0	0	0	0	3.2	2.4	0.8	0	0
2	Tirunelveli	124	34.68	12.9	0.81	1.61	0.81	0	0	0	0	0	34.68	12.9	0.81	1.61	0.81
3	Tiruvannamalai	125	3.2	1.6	0	0	0	0	0	0	0	0	3.2	1.6	0	0	0
<b>Tamilnadu</b>		<b>374</b>	<b>13.64</b>	<b>5.61</b>	<b>0.53</b>	<b>0.53</b>	<b>0.27</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>13.64</b>	<b>5.61</b>	<b>0.53</b>	<b>0.53</b>	<b>0.27</b>



Table A.9. Change in connectivity to Health facilities from sample habitations after PMGSY Road

(% of habitations)

District	No. of habitations Covered	All weather pucca road connectivity			Reduction in travel time to reach the nearest health facility in case of maternity emergencies	Reduction in travel time to reach the nearest health facility in case of maternity emergencies			Reduction in travel time to reach the nearest health facility in case of serious physical injuries. Accidents	Reduction in travel time to reach the nearest health facility in case of serious physical injuries. Accidents			Reduction in travel time to reach the nearest health facility in case of other medical emergencies	Reduction in travel time to reach the nearest health facility in case of other medical emergencies		
		Public Health Centre (PHC)	Govt. Hospital	Pvt. Hospital/ Nursing home		Upto 30 minutes	30-60 minutes	More than 60 minutes		Upto 30 minutes	30-60 minutes	More than 60 minutes		Upto 30 minutes	30-60 minutes	More than 60 minutes
Salem	15	93.33	93.33	80	86.67	60	26.67	0	86.67	60	26.67	0	86.67	53.33	33.33	0
Tirunelveli	15	73.33	80	80	46.67	26.67	13.33	6.67	46.67	26.67	13.33	6.67	46.67	26.67	13.33	6.67
Tiruvannamalai	15	40	60	53.33	6.67	6.67	0	0	13.33	13.33	0	0	13.33	13.33	0	0
Tamilnadu	45	68.89	77.78	71.11	46.67	31.11	13.33	2.22	48.89	33.33	13.33	2.22	48.89	31.11	15.56	2.22

**Table A.10. Change in connectivity to Health facilities from control habitations during the period**

*(% of habitations)*

District	No. of habitations Covered	All weather pucca road connectivity			Reduction in travel time to reach the nearest health facility in case of maternity emergencies	Reduction in travel time to reach the nearest health facility in case of maternity emergencies			Reduction in travel time to reach the nearest health facility in case of serious physical injuries. Accidents	Reduction in travel time to reach the nearest health facility in case of serious physical injuries. Accidents			Reduction in travel time to reach the nearest health facility in case of other medical emergencies	Reduction in travel time to reach the nearest health facility in case of other medical emergencies		
		Public Health Centre (PHC)	Govt. Hospital	Pvt. Hospital/ Nursing home		Upto 30 minutes	30-60 Minutes	More than 60 Minutes		Upto 30 minutes	30-60 Minutes	More than 60 Minutes		Upto 30 minutes	30-60 Minutes	More than 60 Minutes
Salem	5	20	20	20	20	20	0	0	20	20	0	0	20	20	0	0
Tirunelveli	5	0	0	0	20	20	0	0	0	0	0	0	20	20	0	0
Tiruvannamalai	5	20	20	20	0	0	0	0	0	0	0	0	0	0	0	0
<b>Tamilnadu</b>	<b>15</b>	<b>13.33</b>	<b>13.33</b>	<b>13.33</b>	<b>13.33</b>	<b>13.33</b>	<b>0</b>	<b>0</b>	<b>6.67</b>	<b>6.67</b>	<b>0</b>	<b>0</b>	<b>13.33</b>	<b>13.33</b>	<b>0</b>	<b>0</b>

**Table A.11. Percentage of children enrolled in sample habitations before and after PMGSY road**

*(% of children of eligible age enrolled in )*

District	No. of Households Covered	primary school before PMGSY Road		primary school after PMGSY Road		secondary school before PMGSY Road		secondary school after PMGSY Road		higher/sr. secondary school before PMGSY Road		higher/sr. secondary school after PMGSY Road		did attend a college before PMGSY Road		did attend a college after PMGSY Road	
		male	female	male	female	Male	female	male	female	male	female	male	female	male	female	male	female
Salem	375	88.51	84.29	96.15	97.33	73.68	46.67	84.75	95.92	0	0	90	62.5	0	0	100	100
Tirunelveli	375	89.39	89.47	100	93.33	89.66	91.43	93.33	88.89	71.43	0	93.75	75	50	0	83.33	100
Tiruvannamalai	375	94.92	90.74	98.55	97.73	88.24	100	100	83.33	75	100	100	100	33.33	0	0	100
<b>Tamilnadu</b>	<b>1125</b>	<b>90.57</b>	<b>87.85</b>	<b>97.89</b>	<b>96.34</b>	<b>86.49</b>	<b>84.93</b>	<b>88.54</b>	<b>92.68</b>	<b>72.73</b>	<b>60</b>	<b>92.59</b>	<b>70.59</b>	<b>40</b>	<b>0</b>	<b>77.78</b>	<b>100</b>