



Evaluation Study on Rural Roads Component of Bharat Nirman

PEO Report No.201



Programme Evaluation Organisation
Planning Commission
Government of India
New Delhi - 110001

May 2010

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**EVALUATION STUDY
ON
RURAL ROADS COMPONENT
OF BHARAT NIRMAN**



सत्यमेव जयते

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PREFACE

1. The President of India, in his address to Parliament on 25th February, 2005, announced a major business plan for rebuilding rural India called “Bharat Nirman”. The Finance Minister, in his Budget Speech of 28th February, 2005, identified Rural Roads as one of the six components of Bharat Nirman and set a time bound goal to provide connectivity to all villages with a population of 1000 persons and above (500 persons and above in the case of hilly or tribal areas) with an all-weather road. A total of 66,802 habitations were proposed to be provided new connectivity under Bharat Nirman. This envisaged construction of 1,46,185 kms of rural roads. In addition to new connectivity, Bharat Nirman also had an ambitious plan for upgradation/renewal of 1,94,130 kms of existing rural roads. The programme has underscored the multiplier effect in the rural economy by linking production sites to the markets and services through Bharat Nirman.

2. The Development Evaluation Advisory Committee (DEAC), as apex body of Programme Evaluation Organization (PEO), entrusted the PEO to conduct an evaluation study on Rural Roads Component of Bharat Nirman. With the approval of competent authority, PEO constituted a Consultancy Evaluation cum Monitoring Committee (CEMC) to monitor the evaluation study. The Committee had representations from Ministry of Rural Development, Govt. of India, Transport Division of Planning Commission, National Rural Road Development Agency (NRRDA), Central Road Research Institute and PEO as its members.

3. The study was aimed at examining:-

- ❖ the coverage of eligible habitations under rural roads;
- ❖ the implementation process, including availability, adequacy and timelines of funds earmarked for rural roads and the role of Panchayati Raj Institutions (PRIs);
- ❖ the status of maintenance of all weather roads;
- ❖ the extent to which all-weather roads have contributed to economic development of rural economy by connecting farms to markets and services, and in improving the economic wellbeing of the rural people by increasing access to economic and social services and ;
- ❖ identify the constraints, if any, in implementation of the programme and suggest remedial measures for improvement.

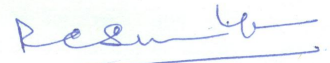
4. The study was initiated in January, 2008 and completed in May, 2010. To generate the required data base, the study covered 14 districts, 27 blocks, 138 roads, 138 habitations and 1380 beneficiary households spread over 7 states. Besides the individual beneficiary, the study teams also canvassed schedules and received collective opinion from 138 focus groups constituted at the selected habitations. The study design was prepared at Programme Evaluation Organization (PEO) Headquarters while the sample surveys were conducted by 15 field units of PEO.

5. The main findings of the study are :

- ❖ 86% of the sample States adopted NRRDA guidelines for implementing the programme;
- ❖ In 71% of sample states, authorities reported that selection of roads, primarily rested with the PRIs.
- ❖ During the Bharat Nirman period, 70.67% of the allocated funds were utilized for construction of rural roads.
- ❖ 91.5% of the sample beneficiary households expressed their satisfaction over the road condition;
- ❖ 77% of the local users were of the view that the contractors used tested materials during road construction;
- ❖ The achievements of target with respect to habitation were 66.4% in the sample States, whereas the same in case of road length was 67.4% for the population of 1,000 + category.
- ❖ 90% of the sample beneficiaries were of the opinion that the opportunities have improved after the roads have become usable.

6. The report has brought out the constraints/issues such as use of substandard material by contractors, inadequate attention to drainage, the need to activate Monitoring Committees, land acquisition issues and to increase in costs during execution, etc. The report has also come up with suggestions, which might assist in the improvement of one of the basic rural infrastructures like rural roads that help in opening most of the opportunities for wellbeing of the villagers. The summary versions of the findings and suggestions were discussed in the Internal Planning Commission Meeting and the members of the Consultancy Evaluation cum Monitoring Committee (CEMC) under the chairmanship of Deputy Chairman, Planning Commission. The comments received from Hon'ble Deputy Chairman, other members of Planning Commission and the Members of the CEMC have been duly incorporated in the final evaluation report.

7. The study received constant support and encouragement from Hon'ble Deputy Chairman, Planning Commission and Secretary, Planning Commission. The study was designed and conducted under the direction of Dr. R.C.Dey, Director, PEO. Shri Sambit Rath, Dr. Renu Yadav, the then Consultants and Shri Virender Rawal, Consultant, PEO, Shri L.N. Meena and Shri Vipin Kumar, Economic Officers of PEO assisted in tabulation, analysis and drafting of the report. The efforts put in by Shri A.K.Chanana, Senior Technical Director, NIC and Smt. Madhu Chhanda Samantaray, Technical Director, NIC unit of Planning Commission and their staff in data entry, tabulation are gratefully acknowledged. The report owes to the contribution of the Regional Evaluation and Project Evaluation Offices in collection of field data and the supervision and guidance of Ms. R.A. Jena, Adviser, PEO and Smt. S.Bhavani, former Senior Adviser, PEO. The list of the officers involved in the study is given at the end of the report. The help and co-operation received from all of them is gratefully acknowledged.



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New Delhi
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Overview of the Report

Bharat Nirman is a flagship programme of Government of India under the aegis of Ministry of Rural Development conceived as time bound business plan (from 2005-06 to 2008-09) and six major areas of rural infrastructure, namely, rural roads, telephone connection, irrigation, water supply, housing and electrification were identified. A sum of Rs. 1,74,000 crore was ear-marked for the scheme.

Rural Roads, one of the six components of Bharat Nirman, was initiated in 2005-06 aimed at achieving the goal of connecting every habitation of 1000 or more population (500 or more in hilly, tribal and desert areas) with all-weather roads by 2009. It was embedded in the PMGSY with a wider funding base and extended scope. The programme envisages generation of multiplier effect in the rural economy by linking sites of production to markets and services.

Objectives and Methodology

The study evaluates the performance of Rural Road component of Bharat Nirman and assesses:

- The coverage of eligible habitations under rural roads;
- To examine the implementation process including availability, adequacy and timeliness of funds earmarked for rural roads and role of PRIs;
- The quality of all weather roads under new connectivity and up gradation;
- The status of maintenance of all weather roads;
- The extent to which all weather roads have contributed to economic development of rural economy by connecting farm to markets and services and helped in improving the economic well being of the rural people by increasing access to economic and social services and
- To identify the constraints, if any, in implementation of the programme and suggest remedial measures for improvement.

Sampling Design for Evaluation Study

A multistage sampling scheme was used for the selection of states, districts, blocks, roads, habitations and beneficiaries. The 28 states, where the programme is in implementation, were selected and categorized into seven

strata and one state each was taken from each category taking into consideration the maximum connectivity achieved. From each state, two districts were selected randomly by taking state average of eligible habitations under rural roads as stratifying parameter—one district above state average and another below state average. Blocks were selected on the same pattern. Five roads (four from Bharat Nirman period and one from PMGSY period) were selected randomly from each selected block. The purpose behind selecting the PMGSY roads was to assess the maintenance of rural roads. One habitation connected by the sample road was selected randomly and from each habitation ten beneficiary households were selected randomly for impact assessment.

Sample Size for the Study:-

Sampling Unit	Sample Size
State	7
District	14
Blocks	27
Roads	138
Habitation	138
Beneficiary house hold	1380
Focus group discussion	138

Instruments of Observations:-

State schedule, District schedule, Block schedule, Road schedule, Habitation schedule and beneficiary household schedule were designed to gather the relevant data for the evaluation study. Apart from this, Focus group discussions and field level notes were also prepared by field officials.

Findings

Planning, Implementation Process, and Role of PRIs/MPs

- 1) 86% of sample states (6 out of 7) adopted National Rural Road Development Agency (NRRDA) Guidelines for implementing the programme, with Rajasthan being the only state to prepare its own state level guidelines along with the central guidelines.
- 2) In 43% of the sample states (3 out of 7), MPs and MLAs, did not play any role in selection of roads, whereas only in 29% of the sample states,

MPs/ MLAs were taking active part throughout the process of selection, prioritising and final approval of roads.

- 3) In 71% (5 out of 7) of sample states, authorities reported that selection of roads primarily rested with the PRIs and identification of roads to be taken up were finalized from Panchayat/ Zila Parishads. In view of positive (71%) involvement of PRI with regard to selection, the role of MPs and MLAs may not assume greater importance despite the guideline calling for their involvement.
- 4) In as many as 57% (4 out of 7) sample states, Zila Pramukh, Pradhan and Sarpanch (PRIs) along with Department did not visit the road works to carry out joint inspection.

Financial Progress

- 1) **Utilisation (New Connectivity):** The overall percentage of utilisation of funds allocated (released) during PMGSY period stood at 66.8% which went up to 70.67% during the Bharat Nirman period. The sample states of Rajasthan and Assam showed expenditure over-runs over and above the allocated amounts during the period of 2005-06-2006-07.
- 2) **Utilisation (Upgradation):** A look at the pattern of funds utilisation for upgradation of roads at the state level revealed that the sample states of Assam and Rajasthan had not reported any expenditure (nor any allocation) on upgradation of rural roads. Himachal Pradesh (4.1%), Gujarat (during Bharat Nirman, 28.5%) and Kerala (during Bharat Nirman, 13.3%) reported very low utilisation percentages of the allocated money for the purpose. The over-all utilisation percentage at the state level, during the PMGSY period came to 80.9%. This figure dipped to 39.21% during the Bharat Nirman Period.
- 3) **Availability, Adequacy and Timeliness of Funds:** As per the data, three states, viz. Gujarat, Orissa and Rajasthan reported 100% availability of funds in time as stipulated in the guidelines. In case of Assam, Himachal Pradesh and Kerala funds were available only for 19 projects. Kerala reported that funds for the 19 out of twenty sample projects were adequate and received in time. In Assam, for 19 projects ample funds were there and 18 projects received them as per the schedule, i.e., 95% projects reported adequacy of funds and 90% projects reported that the funds reached in time. Himachal Pradesh received funds in time but that could meet the requirement of 16 projects only. Out of 20 projects in Bihar only 18 could be studied, and for these, funds were neither sufficient nor in time. Only 8 projects could be completed out of the 18

taken for the study. Funds fell short by 33.33%. In all, three states viz. Bihar, Himachal Pradesh and Orissa reported inadequacy of funds.

- 4) **Reasons for non-availability and inadequacy of funds:** No complaints regarding availability of funds were noticed by all the projects but their adequacy was an issue in Bihar, Himachal Pradesh and Orissa. Two of the projects in Bihar held 'escalating prices' responsible for that, while a project in Himachal Pradesh felt budget estimate was less, and in Orissa. One of the project contractor felt funds were inadequate for the purpose. Delay in receiving fund was only reported by Bihar projects.
- 5) A **stochastic frontier analysis** was done with the road level data on the length of road in km as the output variable and the cost of labour and material as the inputs (Chart 6.3, pg 83). The least efficient states are Kerala and Gujarat. Interestingly, the flood-prone state of Bihar and the hilly state of Himachal Pradesh come out as the most efficient states in terms of utilising the funds.

Quality Control

- 1) **Overall Satisfaction:** The reported satisfaction levels of most of the beneficiaries' vis-à-vis the conditions of the roads have been mostly positive (91.5 %). Of these, people from Bihar (34.4%) and Assam (16%) have reported dissatisfaction most of all.
- 2) **Tier-1 Quality Control:** Apart from Gujarat and Himachal Pradesh, where the details at the road-levels are not consolidated at the state-level, all the states have carried out the mandatory quality control tests at the Tier-1 level and have ensured that the contractors carry out the mandatory control tests under the supervision of the District PIU.
- 3) As per 77% local users, contractors used tested and standard quality material, but 13 % users in states like Assam, Bihar and Gujarat reported that quality and quantity of materials used by the contractor were not up to the mark; there was a lack of bituminous thickness; inadequate quantity of black tapping was used and substandard quality of cement, bricks was used instead of stones, while 10% of local users (4 from Assam, 3 from Gujarat, 2 from Kerala and 5 from Orissa) did not respond at all.
- 4) **Tier-2 Quality Control:** Progressively increasing numbers of inspections were carried out at the state, district and block levels by the State Level Monitors (independent of executive agency deployed), i.e., State-level Quality Monitor (SQM) cells as can be seen in the figures in 2006-07 over those in 2005-06 at the Tier-2 Quality Control Mechanism.

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- 5) Periodic inspections carried out by the national level independent monitors, i.e., **National Quality Monitors (NQM)** in the selected states are in 2006-07 (1952) is 710 less than the previous year as reported by the state authorities.

Coverage of Habitations and Length of Road Covered

- 1) During the study period, i.e., from the year 2005-06 to year 2006-07, achievement of targets in new connectivity has been 72% in terms of habitations with 1000+ population covered, and 80.9% in terms of road length constructed. The coverage in terms achievement of targets for habitations with 500+ population has been more than 100% both in terms of connectivity to habitations and road length constructed (118.6% and 117.2% respectively).
- 2) The achievement of targets over all the 7 sample states comes out to be 66.4% in terms of habitations covered and 67.4% in terms of meeting the road length construction targets for 1000+ category. The same figures for the 500+ category are 28.2% and 7.3% respectively.
- 3) The connectivity achieved at all the levels (viz. state, district and block levels) up till the date of visit, i.e., April 2008, due to both PMGSY and Bharat Nirman showing some common characteristics. Assam and Bihar show very low levels of connectivity achieved with figures of 27.1% and 42.1% at the state level under new connectivity for habitations with 1000+ populations. Overall, the average figures under new connectivity for 1000+ habitations are 73.1%, 54.5% and 62.7%, at the state, district and block levels respectively.
- 4) Overall, only 20.3% of the roads in the sample (from a total of 138 roads) were completed on time, i.e., within 9 months. This happened to be an improvement from the PMGSY period, where that figure stood at 7.25%. A further 8% of the roads took between 9-12 months and some 16% of the roads took beyond a year's time. The worrying issue is the high percentage (8%) of the incomplete roads. These incomplete roads were in Assam and Himachal Pradesh. Rajasthan was the best performing state under Bharat Nirman with almost 70% of the 20 roads selected being complete in time.
- 5) The three main problems were cited as reasons for delay in completion of projects were of adverse weather condition (around 37% projects, majority of them being from Assam, Bihar and Orissa), delay in acquisition of land (which affected 13.8% of projects) and non-availability of labour and material (6.52%).

Impacts of the Scheme

- 1) Overall Impact: 90% of the beneficiaries asked in all the sample states were of the opinion that the opportunities have improved after the roads have come into being. This figure has to be moderated by the fact that as many as 65% of the respondents had felt that there were adequate opportunities already in place in the region. A more detailed look at the figures arranged state-wise (in Chart-3.5a) would reveal that the states where the roads have made a perceived difference in terms of generating employment opportunities are Orissa and Bihar.
- 2) The trends show improvement ranging from 26.25% in Gujarat (where almost 70% of the sample beneficiary population consists of cultivators) to 4.34% in Orissa where (only 39% of the beneficiaries in the sample are cultivators). States like Kerala where the proportion of sample population involved in agriculture is 20% have also shown increase in income levels to the tune of almost 10%.
- 3) A similar increasing trend was found for the agricultural workers in the sample states as seen in Chart 3.5b. All the states showed increase in income levels. In Himachal Pradesh the increase is as high as 60.12% followed by the states of Rajasthan (at 36.96%) and Bihar (at 18.28%).
- 4) The increase in income for people involved in work other than agriculture fluctuated between 31.73% in Gujarat to 8.17% in Orissa. All the studied states had shown significant increase in income. In total, 13.45% increase of income had been observed in the aftermath of the rural road scheme in seven sample states.
- 5) A large proportion of beneficiaries (67.75%) felt that access to educational centres have improved after the construction of rural roads.
- 6) Visible improvement has been reported in access to health services by respondents in Kerala where 100% of the beneficiaries felt that the situation has improved, it was followed by Orissa and Rajasthan where more than 96% beneficiaries affirmed it. In Bihar 80%, Gujarat 71% and Himachal Pradesh 50.5% beneficiaries felt that there had been significant improvement in access to hospitals. Only in Assam (45%) majority of sample population informed marginal improvement and 5.5% felt there was no change.

Chapter 1

Introduction

Rural roads are the most essential infrastructure for socio-economic uplift of the rural community. These create a congenial environment for economic prosperity and thereby ensuring healthy living conditions for the rural inhabitants. Provision of rural roads increases mobility of men and materials thus facilitates economic growth.

Several studies have already established that there is a strong relationship between rural roads and socio-economic development. During the 80s, Indian Road Congress conducted studies on the rural roads with the main objective to find out and quantify the possible impact of roads on the socio-economic development in rural areas. A socio-economic survey conducted in a remote area in India by CRRI in 1989 showed that the villages located on the main road are comparatively well developed than those away from the road. The rural transport study carried out (NCAER and IIBM, 1989) for two different periods (i.e., in 1979 and 1989) revealed that after the development of rural roads, there was a change in transport modes in rural areas alongwith an increase in economic activities.

Background

As the development of rural roads is a subject of the state list, the Central Government attention towards rural roads was the least until 1967, when a special committee under the Chairmanship of Shri H.P.Sinha was appointed. The Committee studied the rural roads and the connectivity pattern and recommended certain criteria for developing and for allocation of budget for this purpose. Since the Fifth Five Year Plan, funds were allocated under various rural development programmes such as Minimum Needs Programme (MNP), National Rural Employment Programme (NREP), Rural Landless Employment Guarantee Programme (RLEGP), Jawahar Rozgar Yojana (JRY), etc. for the development of rural roads.

During the Fifth Five Year Plan period (1974-79) rural roads were included as a part of Minimum Needs Programme (MNP) of the Central Government and received importance for development. The programme envisaged connectivity of all villages with population of 1500 and above, as per 1971 census, with an all weather road by the end of the Fifth Five Year Plan. It also proposed cluster approach for connectivity in respect of hilly, coastal, tribal and desert areas, where the villages were smaller in population size. During the year 1978, the Working Group set up at Planning Commission projected an estimation of around Rs. 1100 crore for providing all weather connectivity to all the villages of India. As a result of which, 30% of the total

outlay was diverted towards rural road sector during Sixth Five Year Plan (1980-85). Similarly, the plan outlay under the Seventh Five Year Plan (1985-90) was Rs. 1729.40 crore for developing rural roads. During the Eighth Five Year Plan (1992-97) priorities were accorded to link all villages with a population of 1000 and above on the basis of 1981 census and to accelerate village connectivity in respect of backward regions and tribal areas.

During the Ninth Five Year Plan (1997-2002), the connectivity criteria under MNP was once again revised. The revised norms for connectivity of villages adopted the 1991 population census as the base and the criteria were as below:

- Plain areas: (i) 100% of all villages with population above 1000 and (ii) 75% of all villages with population between 500-1000.
- Hilly areas: (i) 100% of all villages with population above 500 (ii) 75% of the villages with population in range of 200-500.
- Tribal, coastal, riverine and desert areas: 100% of the villages with population above 500 and (ii) 75% of the villages with population in range of 200-500.

It was further stipulated that in case the above criteria does not ensure connectivity to 85% of the village population in a district, then villages with lesser population than mentioned above should also be considered for connectivity.

NRRDC

With an aim to provide connectivity to all unconnected villages, Government of India constituted a National Rural Road Development Committee (NRRDC) during the year 2000. The Committee has also been assigned to identify the road length required for total connectivity, the detailed specifications for construction of all weather road, fund requirement and suggestions for implementation mechanism.

PMGSY

On the recommendations of the NRRDC, Government of India launched a nation wide programme called ‘Pradhan Mantri Gram Sadak Yojana’ (PMGSY) on 25th December, 2000 in order to provide road connectivity, through good all weather roads to all rural habitation of targeted population. In earlier programmes, the village with a defined population was the target for providing connectivity, while the PMGSY envisaged ‘habitation’ as the unit, to reach out to more settlements and more people with accessibility.

The programme aimed to provide connectivity to all habitations up to 500 and above population in plains and in respect of hilly, desert and tribal areas the habitations with 250 and above population is targeted.

Bharat Nirman

It is a flagship programme of Government of India conceived as time bound business plan to provide rural infrastructures during 2005-06 to 2008-09. Six major rural infrastructures namely, rural roads, telephone connection, irrigation, water supply, housing and electrification were identified and over Rs. 1,74,000 crore was ear-marked for the development.

Rural Roads under Bharat Nirman

Rural Roads, as one of the six components of Bharat Nirman initiated in 2005-06 aims at achieving the goal of connecting every habitation of 1000 or more population (500 or more in hill, tribal and desert area) with all weather roads by 2009. It is actually embedded in the PMGSY with wider funding base and extended scope. The programme envisages generating multiplier effect in rural economy by linking production to market and services.

It is recognized that the improved connectivity not only enhances the employment opportunity in non-agricultural sectors, but also facilitates better availability of public services and functionaries in the rural areas. Accordingly, investment in rural roads ultimately benefits the poor through increased income and improved consumption pattern which leads to higher productivity and growth.

Salient Features of Rural Road Component of Bharat Nirman

To achieve the time bound targets of Bharat Nirman, 1,46,185 km. road length is proposed to be constructed by 2009 which will benefit 66,802 unconnected eligible habitations in the country. It is also proposed to upgrade 1, 94,132 km. of the existing associated through routes ensuring full farm to market connectivity. The programme is entirely funded by the Central Government and the investment requirement for achieving the goal of rural roads under Bharat Nirman has been estimated at Rs. 48,000 crore.

The guidelines for the implementation of rural roads under Bharat Nirman issued by Ministry of Rural Development are the same that of the guidelines for PMGSY. Some salient features of rural roads as depicted in its guidelines are as follows:

1. Programme Implementation: The Programme is being implemented in 28 states of India. The co-ordination and implementation of the programme are carried out by a 3-tier system.

- (i) **NRRDA:** National Rural Road Development Agency (NRRDA) is coordinating the programme at the Central level.
- (ii) **SRRDA:** At the state level, the programme is executed through an agency known as State Rural Road Development Agency (SRRDA).
- (iii) **PIU:** At the district level, the programme is planned, coordinated and implemented through the executive agency known as Programme Implementation Unit (PIU).

2. Quality Control Mechanism: A three-tier mechanism has been put in place to ensure the quality of rural roads.

- (i) **Tier-1 (PIU) :** In the first tier the quality is ensured through an in-house mechanism wherein the contractors are required to carry out the mandatory quality control tests according to prescribed specifications under the supervision of the PIU.
- (ii) **Tier-2 (SQM):** The State Government is required to deploy state quality monitors (SQM) independent of executing agency. The States are to take appropriate corrective actions on the observations of the monitors.
- (iii) **Tier-3 (NQM) :** In the third tier of quality mechanism, inspections by independent monitors at the National level, called as the 'National Quality Monitors' are carried out systematically with a view to providing guidance to the field level machineries and to see whether the quality of works under the programme conforms to the standards.

3. Feasibility and Detailed Project Report: Each rural road project, whether new construction or up gradation of an existing road have a separate feasibility and detailed project report (DPR). The DPR is based on the detailed survey and investigations and designed with choice of technology. The DPR prepared by the executive agencies is being scrutinized by the State technical agencies before it is being approved.

4. Network Planning: The National Transport Policy Committee (NTPC, 1978) proposed a network approach for planning and development of rural roads which indicates that roads have to be planned and programmed in such a way that village/habitations are to be connected in an optimal way to achieve efficient flow of traffic and accessibility.

5. Block Level Master Plan: Block wise Master Plans of rural roads are prepared and approved by the block level Panchayat.

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- 6. District Rural Road Plan (DRRP) and Core Network (CN):** The District Rural Road Plan is a master plan of existing and proposed road network for the district being prepared by the PIU. The Core Network (CN) is a sub set of DRRP which provides the basic access to all habitations with one all weather roads. The block level Master Plans are integrated in to DRRP and approved by the district Panchayat.
 - 7. Consultation with Public Representatives:** The programme has an inbuilt mechanism for consultation with public from panchayat to parliament. The members of parliament (MPs) are being consulted at both the Core Network finalization and annual proposal stages.
 - 8. Rural Road Manual:** The Rural Road Manual prepared by the Ministry of Rural Development is covering all the aspects of road construction and at present, it is the basis of all works under the programme.
 - 9. Book of Specifications and Standard Data Book:** In order to streamline the process of estimating and to standardise contracts, a separate book of specification and a Standard Data Book has been prepared for rural roads. The State Governments are to prepare the Annual Schedule of Rates (SOR) as per these documents.
 - 10. Standard Bidding Documents:** To standardise the road works tendering process, a standard Bidding Document has been provided to the States for adoption & use in all rural road tenders.
 - 11. Computerized On-line Management, Monitoring and Accounting System (OMMAS):** It is a nation-wise programme being managed and monitored on-line. Special application software has been developed by C-DAC which envisages that the DPIUS are to uphold the data regarding the road proposals and progress of construction comprising both physical and financial data on to the PMGSY website.

Chapter 2

Evaluation Study – Objectives & Methodology

The Evaluation study on Rural Roads Component of Bharat Nirman has been conducted by Programme Evaluation Organization (PEO) at the instance of Planning Commission.

2.1 Objectives of the Study

The broad objectives identified for the study are listed below:-

- ❖ To assess the coverage of eligible habitations under rural roads;
- ❖ To examine the implementation process including availability, adequacy and timeliness of funds earmarked for rural roads and role of PRIs;
- ❖ To assess the quality of all weather roads under new connectivity and upgradation;
- ❖ To assess the status of maintenance of all weather roads;
- ❖ To assess the extent to which all weather roads have contributed to economic development of rural economy by connecting farm to markets and services, and helped in improving the economic well being of the rural people by increasing access to economic and social services; and
- ❖ To identify the constraints, if any, in implementation of the programme and suggest remedial measures for improvement.

The specific issues that came up for coordination under the above stated objectives included examination and assessment of:-

- ❖ All weather road connectivity to every habitation with 1000 and above population and 500 and above population in hilly and tribal areas;
- ❖ Utilization of requisite materials and the quality of the roads constructed;
- ❖ Adequacy and availability of fund for road construction;
- ❖ Involvement of local workers and the PRIs;
- ❖ Repair and maintenance of the rural roads;

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- ❖ Linkages of rural roads with market, educational institutions, post office, bank, health centres and other commercial establishments and service places;
 - ❖ Development in the economic activities of the rural people and thereby increase in income and wealth;
 - ❖ Improvement of social services in the rural villages due to availability of all weather connectivity;
 - ❖ Constraints and remedies.

2.2 Sampling Design

While exhaustive primary and secondary information were collected to test the various hypotheses implicit in the objectives listed above, the following multistage sampling design involving the selection of states, districts, blocks, roads, habitations and beneficiaries was formulated to achieve the results. Efforts were also made to collect relevant information through Focus Group Discussions at every selected habitation. The sampling design that has been envisaged is given as below:-

2.2.1 Selection of States

The States (28), where the programme is in implementation were categorized according to specific characteristics under seven categories (list of the states is given at annexure). One state from each of the seven categories was selected purposively taking into consideration the maximum number of connectivity provided. The selected states included the following: i) Gujarat (key state), ii) Assam (hilly and tribal dominated area), iii) Rajasthan (desert area), iv) Orissa (flood prone area), v) Himachal Pradesh (problematic area in transporting materials, etc.), vi) Bihar (inadequate institutional capacity) and vii) Kerala (zero target for new connectivity).

2.3.2 Selection of Districts

From each state, two districts were selected by taking state average of eligible habitations under rural roads as stratifying parameter. Accordingly, one district from the stratum above state average and the other district below state average were selected randomly.

2.3.3 Selection of Blocks

From each district, two blocks were selected by taking district average figure for coverage of eligible habitations under rural roads as stratifying

parameter. Accordingly, one block from the stratum above district average and the other block from below district average were selected randomly.

2.3.4 Selection of Roads

Five roads (four from Bharat Nirman period and one from PMGSY period) were selected randomly from each selected block for making overall assessment of the programme. One road was selected purposively from PMGSY period in order to assess the status of maintenance of rural roads. Areas where Bharat Nirman road was not constructed, PMGSY roads were taken.

2.3.5 Selection of Habitations

Every single habitation connected by the selected road was selected for necessary evaluation. Where any selected road provided connectivity to more than one habitation, then one habitation was selected randomly for necessary investigation.

2.3.6 Selection of Beneficiary Households

From each habitation ten beneficiary house holds were selected randomly for necessary examination and assessment at household level.

2.3.7 Selection of Focus Groups

From each habitation, a group of five to seven persons (who were knowledgeable and conversant with the programme or involved in planning and implementation) were selected and interviewed purposively in order to collect relevant and credible information to the extent possible.

2.3.8 Sample Size

The figure indicating gives the sample size of different stages that resulted from the above sampling procedure is given as below;

Sampling Unit	Sample Size
State	7
District	14
Blocks	27
Roads	138
Habitation	138
Beneficiary House Hold	1380
Focus Group Discussions	138

In case of Nalanda district of Bihar State, the PEO field team canvassed road level schedules in respect of 8 selected roads (instead of 10). Therefore, a total of 138 schedules were canvassed, each for road level and habitation level (instead of 140-140). Similarly only one block level schedule was canvassed in that district (Nalanda), hence, total no. of blocks selected were 27 (instead of 28) and Beneficiary house holds canvassed were 1380 (instead of 1400).

2.4 Instruments of Observation

Structured questionnaires were prepared at various levels to generate primary and secondary information required for meeting the objectives of the Evaluation Study, which included the following:

2.3.1 State Schedule

This schedule was primarily structured to collect information on selected states in regard to the implementing process of rural roads programme under Bharat Nirman, the role of State Rural Road Development Agency (SRRDA), Coverage and status of the programme, Cone Net work/ State Rural Road Plan (SRRP), the detailed project report (DPR) for each road, approval of road plan in consultation with the representatives of parliament and the state legislative Assembly, etc.

2.3.2 District Schedule

This schedule was designed to collect information from the district level implementing agency, i.e., the programme Implementation Unit (PIU) which was designated as the prime executive agency of the programme. The other information such as: status of rural roads in the district, physical and financial performance under PMGSY and Bharat Nirman period, repair and maintenance of roads, effectiveness of the three tier quality control mechanism, etc. were also collected.

2.3.3 Block Schedule

The schedule was structured to collect information on block level master plan on rural roads, construction of all weather roads in the block during PMGSY & Bharat Nirman period, block level vigilance committee and involvement of PRIs in planning and implementation stages of the rural road programme.

2.3.4 Road schedule

The questionnaires structured at this level was meant for collecting data on the profile of the road, planning and implementation, fund availability and

its timely release, maintenance of road, quality and cost of the materials and performance of the contractor in completing the construction work, etc.

2.4.5 Habitation Schedule

This instrument was designed to gather information on different aspect of the habitation, i.e., demographic features, satisfaction level of the villagers in utilizing the all weather roads and the quality of the roads as per the opinion of the villagers, etc.

2.4.6 Beneficiary House hold Schedule

These schedules were designed to generate primary information required for the assessment of the impact of rural roads on the target group (the villagers). Credible information was collected through these schedules on their income before and after rural roads, availability of social service institutions before and after rural roads, and improvement in the economic well-being of the inhabitants after construction of roads, etc.

2.4.7 Focus Group Discussion

Focus groups consisting of five to seven knowledgeable persons from each selected habitation were formulated by PEO field team and relevant information regarding the implementation of the programme was collected out of the discussion.

2.4.8 Field Notes at Different Levels

In addition, the field investigation team of Regional Evaluation Officer (REOs) and Project Evaluation Office (PEO) of the Programme Evaluation Organisation prepared qualitative notes as per PEO structured guide points at State, district, road (connectivity) and habitation level which explained the administrative, monitoring and accountability mechanisms, their efficiency, method of distributing tenders among the contractors, problems faced by the district and block authorities in acquisition of land for construction of roads, repair and maintenance of the all weather roads during post construction period, etc.

2.5 Reference Period

The reference period of the study was from the year 2000 to year 2007 (PMGSY and Bharat Nirman). As the Construction of all weather roads under Bharat Nirman period had been started from the year, 2005-06, most of the data collected by the field team were related to the period of 2005-06 to 2006-07.

2.6 Field Work for Data Collection

After pre-testing of schedules, the Orientation programme for field staff was held at PEO Headquarters, Planning Commission, New Delhi in the last week of November 2007. The Regional Evaluation Offices and Project Evaluation Offices located in different states started the field work during January-February 2008 and completed by July 2008.

2.7 Data processing and Analysis

The filled-in schedules were received at the Headquarters of Programme Evaluation Organisation at New Delhi and the scrutiny and coding were done before handing over those to the National Informatics Centre (NIC) Yojana Bhavan Unit (YBU) for data entry and processing. Consistency of the collected data was ensured before generating analytical tables. The necessary design of the data entry, consistency checks and tabulation of the collected data were supplied to YBU of NIC.

Chapter 3

Planning, Implementation Process and Role of PRIs/MPs

Planning for Rural Road (Planning, Scrutiny and Clearance of Proposal)

3.1 Planning

Planning of networks of roads consisting of National Highways, State Roads, Major District Roads and Village Roads was done at the district level. A concept of core network was adopted to focus on a set of roads to cover target habitations. On this basis, priority to work was ranked and allocation of funds for maintenance was made. Further GIS (Geographic Information System) based data was made use of and discussions were held with C-DAC (Centre for Development of Advanced Computing) for better identification of the "core network".

A vision document of 20 years was also prepared in consultation with the state governments to adopt policy directions and to address concerns regarding management and technical capacity. Rural road planning further included:-

- ❖ Consulting public representatives, viz., Sarpanch local MPs and MLAs.
- ❖ Preparation of Rural road manual.
- ❖ Book of Specification and Standard Data Book be released.
- ❖ Standard bidding Document was prepared and sent to all the states.
- ❖ Computerised On-Line Management Monitoring and Accounting System (OMMAS) was adopted.
- ❖ Rural Road Safety committee was formed.
- ❖ A provision was made at two levels for Independent quality monitoring.

3.2 Scrutiny and Clearance of Project

It was decided that PIUs would formulate a master plan for each block indicating the habitations in that block and the existing status of the road connectivity, including the proposed new construction as well as roads

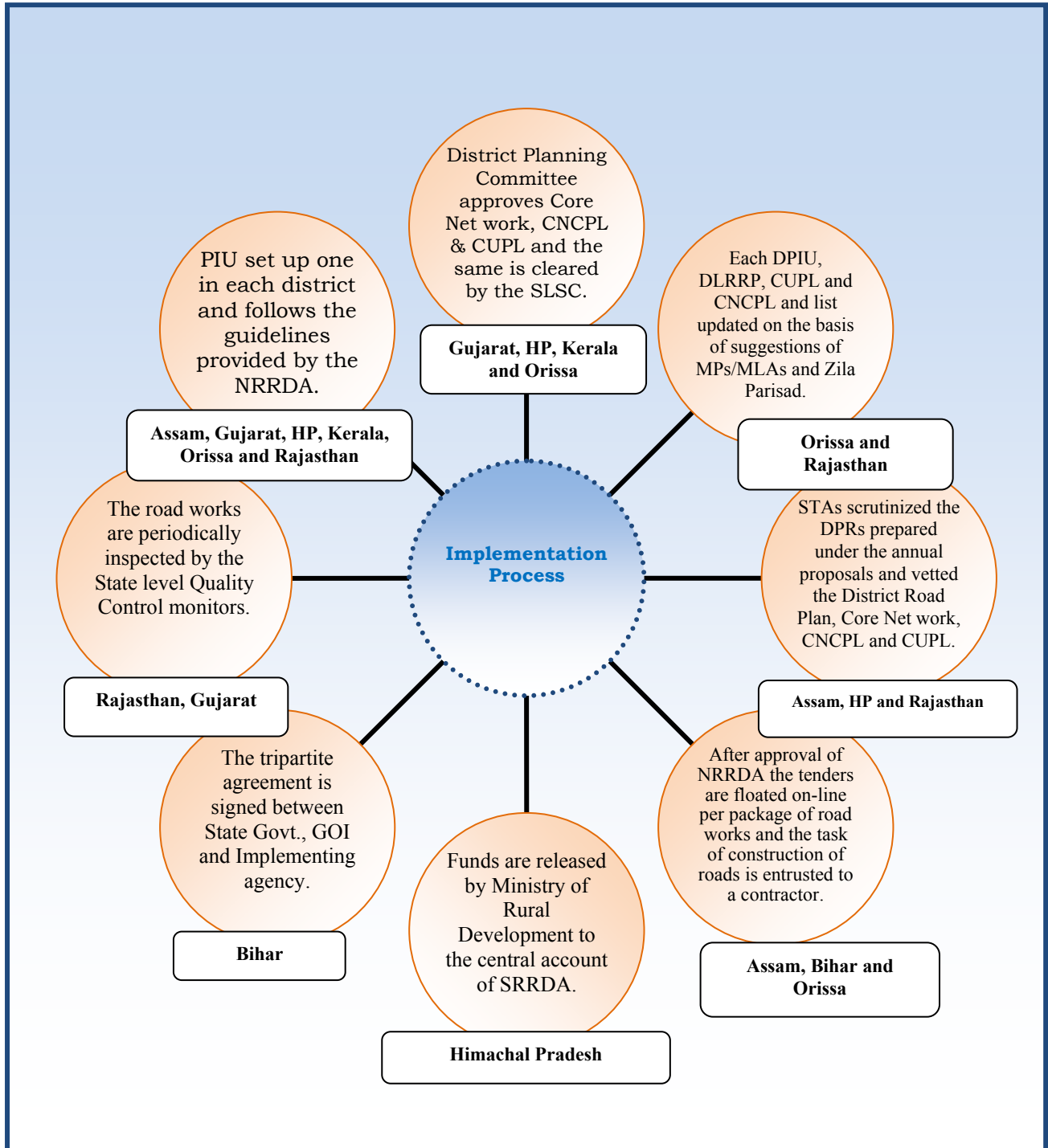
requiring up gradation. This would, thereupon, be integrated into a district master plan, to be called the District Rural Road Plan. The plans so prepared would be subjected to close technical scrutiny so as to arrive at the most economical cost of achieving the targets of the programme and would also indicate the spacing in the execution of works. The master plan would be approved in the Governing body of the Respective DRDA, taking into account the views and suggestions of the local members of parliament and members of state Assembly. One of the main objectives of the scheme is to provide road connectivity, through good all-weather roads, to all rural habitations with a population of more than 500 persons by 2007. In this regard, guidelines indicated that specific agencies should be designated for implementing the programme. Each State Government/UT Administration identified one or two suitable agencies designated as Executing Agencies. The programme was to be planned, coordinated, and implemented through the Executing Agencies at the district levels. A Programme Implementation Unit (PIU), entirely directed towards the programme, was to be set up in all the districts concerned. All PIUs were to be manned by competent technical personnel chosen from the available staff. The state government was to establish linkages in this regard with the District Rural Development Agencies (DRDA).

At the initial stage, the District Rural Road Plan (DRRP) was prepared on the basis of the prescribed norms/guidelines fixed by the Govt. of India through detailed survey/ identification of habitations. This was followed by preparation of the Core Network, identification of the habitations which required new connectivity in consultation with the concerned BDO/Tehsildar or Rural Development Department (RDD) at the district levels. The same was placed before the Zila Parishad for approval. After its approval by the Zila Parishad, a Comprehensive New Connectivity Priority List (CNCPL) was to be prepared on the basis of population criteria for the newly connected habitations. The selected projects were to be placed before the State Level Standing Committee (SLSC) for the final approval. The prepared DPR was also sent to the State Technical Agency (STA) for technical scrutiny. Subsequently, it was to be sent to the National Rural Road Development Agency (NRRDA) for recommendation of the Empowered Committee. After its approval, tenders were to be invited from specified categories of Contractors under the supervision of Engineering Division. The lowest bidder was to be selected for execution of work on specific terms, i.e., deposit of security money, future maintenance contracts, stipulations regarding time period of completion, etc. The PIUs were authorized for withdrawal from the SRRDA account on the basis of expenditure incurred. Funds were released by the Ministry of Rural Development to the central account of SRRDA.

3.3 Implementation Process in Various Sample States

To see whether the aforesaid norms were followed or not, the necessary data were collected from sample states. **Diagram 3.1** presents implementation procedure adopted in the sample states by the concerned authorities. It reveals that in Assam, Gujarat, HP, Kerala, Orissa and Rajasthan (constituting 86% of state sample) road construction work was executed through Programme Implementing Units as per the guidelines provided by the NRRDA (one of which, headed by Superintending Engineers, was set up in each district). Only in Bihar various central agencies, i.e., IRCON/NPCC/NBCC/CPWD were involved in executing the work in different phases. In Gujarat, HP, Kerala and Orissa (constituting 57% of state sample) District Planning Committee approved the list of roads, core net work, Comprehensive New Connectivity Priority List (CNCPL) and Comprehensive Up-gradation Priority List (CUPL) to be selected and the same was cleared by the State Level Standing Committee (SLSC) for submission to Central Empowered Committee through NRRDA.

**Diagram-3.1: Implementation Process of Rural Roads in Different States:
The Salient Features**



In Orissa and Rajasthan (29% sample states) each DPIU was assigned the task of preparation of the District Level Rural Road Plan (DLRRP), Comprehensive New Connectivity Priority List (CNCPL) and Comprehensive Upgradation Priority List (CUPL) and the list was updated on the basis of suggestions of MPs and MLAs/ Zila Parishad. In Assam, HP and Rajasthan (43% sample states) State Technical Agency (STA) provided technical support to the PIUs. STAs vetted the Distt. Road Plan and core network, CNCPL and CUPL scrutinized the Detailed Project Reports (DPRs) prepared under the annual proposals. In Assam, Bihar and Orissa (43% sample states), after approval of NRRDA, tenders were floated online, per package of road works; and the task of construction of roads was entrusted to a contractor who fulfilled the tender norms and other conditions. Construction of roads has been done in different phases through open tender process.

Implementation process differs from state to state, i.e, **in Assam** as per PMGSY guidelines roads were prioritized every year on the basis of CNCPL and the population of unconnected habitation. District-wise lists of roads were approved by the Zila Parishad and then the list of all districts were compiled and approved by SLSC. After that DPR was prepared by the PIU and submitted to NRRDA for scrutiny and clearance from STA. Under Bharat Nirman, priority has been given to roads which can provide new connectivity to (as yet) unconnected 1000+ habitations in plain areas and 500+ in Hill and Tribal areas.

In **Bihar**, the Phase-I and II of PMGSY were undertaken by Rural Works Department of the state government. The work of Phase-III to phase-VII were given to five nominated Central Agencies viz NBCC (National Building Construction Corporation Ltd., NPCC (National Projects Construction Corporation Ltd.), IRCON International Ltd., CPWD, and NHPC (National Hydro Power Corporation) Limited.

In **Gujarat**, Department of Roads and Buildings (R&B) was designated as the nodal department. Gujarat State Rural Roads Agency (GRRDA), headed by a Chief Executive Officer, was designated as Programme Implementing Agency at the state level. At the district level, the programme was implemented by the Roads & Buildings division of District Panchayat, headed by Executive Engineer (EE). The GSRRDA followed the guidelines provided by the NRRDA and the Executive Engineer. Panchayat acted as a head of the Project Implementing Unit (PIU). Most DPIUs in the state continued to follow the District Rural Road Level Plan, which was prepared in 2000-01, covering all the blocks. The field teams observed that the CNCPL and CUPL were updated on the suggestions of MPs and MLAs. On the basis of Core Network, Detailed Project Reports (DPR) were prepared and submitted to State Technical Agency (STA) for approval of plan, calculation of estimates and tender amounts, etc. and the package was submitted to NRRDA, New Delhi for necessary approval and release of funds. Funds were released by Ministry of Rural Development to

the central account of GSRRDA. It was observed that at the District level, the Programme was planned, coordinated and implemented through the Executing Agencies. A Programme Implementation Unit (PIU) was set up in all the Districts concerned.

In **Himachal Pradesh**, the Programme Implementation Unit, i.e., Himachal Pradesh Public Works Department was the basic unit for project planning, execution and accounting. It was responsible for implementation and quality management of PMGSY works and was also the financial and accounting centre at the field level along with ensuring that districts and contractors abided by the contract signed between them.

In **Kerala**, District Planning Committee approved the list of roads to be selected and the same was cleared by the State Level Standing Committee. Followed by preparation of DPR by the PIU and scrutinized by the KSRRDA. The list was submitted to NRRDA. On approval from the Ministry of Rural Development, the same was centrally tendered by KSRRDA and the agreement was executed by the Chief Technical Officer, KSRRDA and the Executive Engineer of the concerned PIU. The sanctioned roads were awarded to contractors on the basis of expertise in the field and on lowest cost quoted among all. All the PMGSY & Bharat Nirman programmes were implemented by the DRDA of the Commissionerate of Rural Development under the overall supervision and guidance of KSRRDA.

In **Orissa**, the Rural Development Department, headed by the Commissioner-Cum-Secretary was the nodal agency/overall charge in the implementation of the programme. The Chief Engineer (RD) had controlled the actual administrative set-up at state level for implementation and supported by the Executive Engineer and others at different levels of administration. The District Rural Road Plan (DRRP) had been prepared on the basis of guidelines fixed by the Govt. of India through a detailed survey with the help of BDOs/Tehsildars/JEs (RD) and same was placed before the Zila Parishad for approval. A Comprehensive New Connectivity Priority List had been prepared on the basis of population criteria for the newly connected habitations. Then, availability of funds from Govt. of India was taken into consideration for the coverage of length of mileage/kms and the selection of roads were being carried out by the Chief Engineer, Rural Development Department (RDD). The selected projects were placed before the State Level Standing Committee (SLSC) for the final approval. The prepared DPR was also sent to the State Technical Agency (STA) for technical scrutiny subsequently all the data was updated on On-line Management System (OMS) for transparency and public information. National Rural Road Development Agency (NRRDA) recommended the same to the Empowered Committee. After approval by the Empowered Committee tenders were invited from contractors and the lowest bidder was selected for execution of work. After the Contractor being selected, the work had been executed with agreements on deposit of security money, future maintenance, time period for

completion, etc. under the supervision of J.E., A.E., and E.E. of Rural Development Department.

In **Rajasthan**, PWD was nominated as nodal department for PMGSY/Bharat Nirman work while Rajasthan Rural Road Development Agency was appointed as the implementing agency. RRRDA executed the work through Programme Implementing Units Headed by Superintending Engineers.

3.4 Standard Guidelines for Implementation of the Programme (Rural Road)

The construction work of rural roads, carried out under the PMGSY since 2000, was modified to accommodate the goals of the 'Rural Road' component of Bharat Nirman (i.e., connecting every habitation 1000+ population in plain areas and 500+ in hilly/tribal areas with all-weather roads) within the stipulated time-frame. To achieve the target, the following new initiatives were taken:

- (1) Formulation of district rural roads plan,
- (2) Preparation of a 20 years vision document,
- (3) Consultation with public representatives,
- (4) Rural roads manual,
- (5) Book of Specifications and Standard Data Book,
- (6) Standard bidding documents,
- (7) Computerized Online Management, Monitoring and Accounting System (OMMAS)
- (8) Training,
- (9) Use of new technology and materials,
- (10) Quality consciousness,
- (11) Outsourcing of technical and management inputs,
- (12) Rural Road Safety; and
- (13) Maintenance.

The programme was implemented through a framework of consultation with public representatives ranging from the Panchayat levels to the Parliament. A Rural Road Manual had been released to guide the implementation of the programme. A separate Book of specification and a standard Data Book had been prepared. As per this, standard bidding documents were to be adopted by the states. For Management Information System (MIS) there was a computerized Online Management and Monitoring Accounting System (OMMS).

Table-3.1: Standard Guideline for Implementation of the Programme: Whether State-level/Dist. guidelines were prepared

Sl. No	State	Standard Guideline at :	
		State Level	District Level
		Not Prepared	Not Prepared
1	Assam	1	-
2	Bihar	1	2
3	Gujarat	1	2
4	Himachal Pradesh	1	2
5	Kerala	1	-
6	Orissa	1	-
7	Rajasthan	-	1
8	Total (%)	6 (86%)	7 (50%)

Table 3.1 explains that **86% of sample states (i.e., 6 out of 7 sample states)** adopted the guidelines provided by National Rural Road Development Agency (NRRDA) only and that these states did not formulate any state-specific guidelines (the only exception being Rajasthan where state level guidelines were made parallel with NRRDA guidelines). These states also issued technical and administrative circulars from time to time to address problems cropping up during implementation of the programme.

It is also clear that the standard guidelines at district level were not prepared in **50% of the sample districts** as programme was implemented according to the operational manual received from NRRDA/ SRRDA. Most of these sample districts adopted the strictures given in the standard bidding document and followed PMGSY guideline as reported by district authorities. In Rajasthan, out of the two sample districts only one district prepared the district level guidelines.

In Bihar, the implementation process involved the preparation of project proposals, i.e., the preparation of DPR based on updated schedule of prevailing rates in the state. As per directives, priority was given to new connectivity to unconnected habitations having a population of more than 1000. In Assam, PIU officials reported that they were not fully equipped to prepare the DPRs

within the limited time period made available to them. The contractors felt that the DPRs prepared in-house were more reliable than the out-sourced ones.

3.5 Role of PRIs/MPs

The guidelines of the programme stipulate that consultations with Members of Parliament be held at both the core network finalization and during the formulation of Annual Proposal stages. **Tables 3.2 and 3.3** presents the view of state level and District level authorities, respectively, about the role of MPs/MLAs and PRIs in planning and implementation of the scheme. It is observed that in the implementation of the projects, The PRIs kept a close watch on the progress of the road construction work. Table 3.2 reveals that in **57% sample states (i.e., in 4 out of the 7 sample states), the proposals of MPs and MLAs had been included in the CNCPL** and the recommendations were within the frame work of the PMGSY guidelines. But to leverage against this, only in **29% states (i.e., in 2 out of 7 sample states), MPs/MLAs were taking active part in the process of selection of programmes, prioritising roads to be taken up, and the final approval of schemes.** Thus, in almost 71% of the sample states (i.e., 5 out of 7 sample states), authorities were reporting that the **onus on selection of roads basically rests with the PRIs and identification of roads (DRRP) to be taken up was finalised from Panchayats/Zila Parishads through a consultative process involving lower level Panchayati Raj Institutions** and elected representatives.

Table 3.2 also reveals that in 43 percent sample states (i.e., in 3 states out of 7 in the sample), Zila Pramukh, Pradhan and Sarpanch (PRIs) along with Departmental Officers visited the PMGSY road works to carry out joint inspection.

Table- 3.2: Role of MP/MLAs and PRIs in Planning and Implementation of the Scheme as Reported by State Authorities

Sl. No	State	Role Played by :					
		The list of all identified proposals are forwarded to MPs & MLAs and action taken thereon	Taking active part in the process of selection, priority of road, final approval	Inspecting the road work	Selection of roads basically rests with the PRIs/ identified roads (DRRP) to be taken up are finalised from Panchayat/ Zila Parishad through a consultative process	Joint Inspection	District Level Vigilance & Monitoring Committee has been constituted in each district
1	Assam	1	-	-	1	-	-
2	Bihar	1	-	-	-	-	-
3	Gujarat	1	-	-	1	-	-
4	Himachal Pradesh	1	1	1	1	1	1
5	Kerala	-	-	1	-	1	-
6	Orissa	-	1	-	1	-	-
7	Rajasthan	-	1	1	1	1	-
Total (%)		4 (57%)	3 (29%)	3 (43%)	5 (71%)	3 (43%)	1 (14%)

Note: Multiple responses received : '1' denotes 'Yes'

It is observed in Table 3.3 that only 29 percent of the district authorities in the selected districts (i.e., those in 4 out of the 14 districts in the sample) reported that local Gram Panchayats created pressure on the executive agencies and kept watch over the quality of raw material used and construction of roads. In 42 % districts (6 out of a total of 14 sample districts) MPs/MLAs had visited the work site during their normal visits and monitored the progress of work. **Despite this, it was suggested by the PRIs that awareness campaigns or the training programs for PRIs (Gram Pradhan, etc.) should be conducted by the implementing agencies regarding their role in such matters.**

Another observation in table 3.3 reveals that 71% of district authorities (i.e., 10 districts out of 14 sample districts) reported that MPs and MLAs reviewed the CNCPL/CUPL and suggested modifications/ additions, which were taken into account.

Table- 3.3: Role of MP/MLAs and PRIs in Planning and Implementation of the Scheme as Reported by Sample District Authorities

State	No. of selected districts	Role Played by :						
		MP/MLAs			PRIs			
		MPs & MLAs reviewed the CNCPL/ CUPL and suggested modifications/ Additions are taken into account	MP/ MLAs take vital role during transect walk in execution of works, if some dispute arises	Visit the work site during their normal visit to the area and monitor the progress of work	The proposals are finally approved by Zila Parishad, District Planning Committee and the routes of road approved by Zila Parishad is adopted for construction	PRIs are actively participating in the selection of road/ Gram Panchayats involved in transect walk procedures, motivating people in donating their land for the road	During implementation of the project the local Gram Panchayat create pressure over executing agency PWD and keep regular watch over the quality of raw materials used & construction of road	The Work committee constituted at the district level inspects the roads and monitors the programme
1. Assam	2	1	1	2	1	1	-	-
2. Bihar	2	1	1	-	-	1	-	-
3. Gujarat	2	2	-	-	2	1	1	-
4. Himachal Pradesh	2	2	2	1	2	2	2	-
5. Kerala	2	2	-	1	1	1	1	-
6. Orissa	2	1	-	1	2	-	-	1
7. Rajasthan	2	1	-	1	-	1	1	-
Percentage over the sample districts (%)	14	10 (71 %)	4 (28 %)	6 (43 %)	8 (57 %)	7 (50 %)	5 (36 %)	1 (7 %)

Note: Multiple responses received

Table 3.3 also reveals that in 57% sample districts (8 out of 14) the proposals were finally approved by Zila Parishad and District Planning Committee which was further adopted for construction. In 50% of sample districts (7 out of 14), PRIs were actively participating in the selection of road and their Gram Panchayats were involved in transect walk procedures, motivating people in donating their land for the road.

PRIs, e.g. Gram Panchayats, Panchyat Samitis were involved in the preparation of proposals in the initial stages and the Zila Parishads were involved in the approval of the plans of roads.

The road work was at times affected by local politics and roads were built in patches without connecting it to any main road, as reported in many Focus Group Discussions. The DRRP and Core Network (CN) were prepared after due consultation and suggestion of MPs/ MLAs. As per the guidelines, the proposals of the MPs/MLAs were fully taken into consideration while preparing/finalizing the plans by PIU. On the whole, it can be concluded that

in the sample states of Assam, probably the Zila Parishad was routinely approving the proposals; PRIs at the block and GP level were not playing any direct and active role in formation of Rural Road plans and programmes.

In Kerala, prioritising of roads was decided by the Panchayats. The Block level rural road plans were prepared in consultation with the Panchayat Sarpanchs. In some cases, villagers were unwilling to hand over their lands, even after their consent had been obtained before the preparation of the DPR. In such situations, Panchayats played an important role in mediating.

Some instances where of non- involvement of PRIs were noticed, are given in the (Box I)

(Box-I)
Non Involvement of PRIs

- In many cases it was found that either PRIs were not involved or were not interested in the work. In the case of NH 35 to Japragaon road, Barbarua Block. Dibrugrh, Assam, it was revealed in the FGD that PRIs did not take any interest in the road construction.
- In Balimi village, Dhenkala, Orissa, the PRI/GP members had not been consulted at the time of initiation of works as the village was 2km away from the GP HQ and they had no scope of any kind of active participation.
- In Romai – Saolikota, Lahwal, Dibrugarh Assam, PMGSY/ Bharat Nirman, roads were under PWD and PWD did not take the opinion of PRIs in planning and implementation of roads.

3.6 State Level Agencies Involved (SRRDA/PIUs)

In **Assam** State Public Works Department (PWD) is responsible for maintenance and development of the infrastructure of road communication of the state. Implementing agency Assam State Road Board (ASRB) under PWD is responsible for preparing the DRRP. Indian Institute of Technology (IIT), Guwahati is State Technical Agency (STA).

In **Bihar**, Rural Works Department of the govt. of Bihar was involved in the work of Phase- I and Phase - II of PMGSY and five nominated Central Agencies viz National Building Construction Corporation Ltd. (NBCC), National Projects Construction Corporation Ltd. (NPCC), IRCON International Ltd., Central Public Works Department (CPWD), National Hydro Power Corporation Ltd. (NHPC) PIU came under NPCC were given the work of Phase–III to VII.

In **Gujarat**, Department of Roads and Building (R&B) was designated as Nodal department. The implementing agency for the programme was the Gujarat State Rural Roads Agency (GSRRDA) at State level, . At district level, the programme was implemented by the Roads & Building Division of district panchayat, headed by Executive Engineer, who was primarily responsible for execution of works & financial control. Each DPIU was assigned the task of preparation of the DLRRP, CUPL and CNCPL. Completed roads in PMGSY phase 2000-2003 were to be maintained by the contractors free of cost for five years as per tender agreement and to be maintained by PIUs hereafter.

In **Himachal Pradesh** PWD is nodal department for execution of work and SRRDA. The H.P. Gram Sadak Development Agency (HPGSDA) is receiving the funds from the Ministry of Rural Development for the PMGSY/Rural Roads programme. It was governing body and executive committee at state level. At road level, the project was implemented by PIUs comprising of J.Es, A.Es and Inspection was carried out by S.Es and C.Es. PIU was involved in quality control, inspection and to supervise the work.

**Inconsistency of information supplied was seen in Himachal Pradesh
(Box II)**

(Box-II)

Questionable Consistency of Data

In District Kangra, Himachal Pradesh, a number of anomalies occurred regarding consistency of the data supplied by PIU and SRRDA. As an example during the year 2000-01 in the District Level Schedule of district Kangra, it has been shown that against a target of 89.120 kms roads, the achievement was 87.570 kms. In the State Level Schedule, under physical progress, it is clearly mentioned that no achievements were made during 2000-01.

In **Kerala**, the State Level Standing Committee (SLSC) was the apex body for clearing the annual project proposals of the state under Bharat Nirman. The PIU was the main organ at district level responsible for the planning for rural roads and implementation of the sanctioned projects. It was headed by Executive Engineer which worked under the over all administrative supervision and guidance of district panchayat. The PIU was attached to Poverty Alleviation Units (PAUs) of district Panchayats. In order to have an overall co-ordination in the planning and implementation of the scheme in the district, a Programme Management Committee has been constituted in each district.

In **Orissa**, as regards the implementation process at the state level, the Rural Development Department, headed by the Commissioner-cum-Secretary was the nodal agency. At the grass root level the PIU consisting of Junior

Engineer, Assistant Engineer and Executive Engineers of Rural Development Departments had supervised and monitored the implementation of the road work.

In **Rajasthan**, the construction part of the road was carried out by the Rajasthan Rural Road Development Agency (RRRDA). PRIs and Zila Parishad were involved in preparation of proposals in the initial stage and the Zila Parishad were involved in the approval of the plans of roads SLRRP was not prepared in the state of Assam, Bihar, HP and Kerala either due to core network prepared for state was that of before commencement of Bharat Nirman or was under preparation. It is observed that State Level Rural Road Plan in most of (57%) sample states was prepared by State Rural Development Agency or SRRDA and in some states by Public Work Departments (HP), District Project Implementing Units (Gujarat) or NATPAC (Kerala). In preparation of District Level Rural Road Plan agencies involved were Rural Works Department of state in 43% sample district, Road & Building Department of Panchayat in 14%, PIU or Pvt. Ltd. Agencies for DPIU in 29% sample districts and NRRDA/REO, etc., in 14% sample districts.

3.7 Empowered Committee

The construction part of the road was carried out by the State Rural Road Development Agency. The prepared DPR were sent to the National Rural Road Development Agency (NRRDA) for recommending the same to the Empowered Committee comprising Department of Rural Development, Ministry of Rural Development, representative of the state government whose projects were being considered by the committee. After approval of the projects by the Empowered Committee tenders were invited from Contractors and the lowest bidder was selected for execution of work at state level.

3.8 Tendering of Works

The construction of selected roads was done as per CNCPL in different phases through open tender process. After approval of projects by the Empowered Committee tenders were invited from Contractors by concerned PIUs through internet and published in prominent newspapers of the area then the committee appointed by the SRRDA opened these tenders and the lowest bidder was selected for execution of work. The work was executed with certain agreement-deposit of security money, future maintenance and time period for completion. It was observed that to standardize the road works tendering process, authorities of all (100%) sample states and selected districts reported that they adopted the Standard Bidding Document as received from NRRDA.

In **Assam**, as soon as the clearance was given by NRRDA tenders for the cleared roads were invited & the works were allotted to the qualified bidders for

the construction of the roads. Works were then executed by the concerned PIUs (S.Es. & E.Es.). The State had adopted a standard bidding document.

In **Bihar**, the construction of selected roads was done as per CNCPL in different phases through open tender process. Tenders were invited as per Standard Bidding Document and work was awarded to contractor as per the lowest quotation made.

In **Gujarat**, after clearance of proposed package from the NRRDA the project proposals were sent to PIUs at district level for execution. After completion of formalities like tendering, scrutiny and work orders the task of construction of roads was entrusted to a contractor who fulfils the tender norms and other conditions. The road works under the PMGSY and Bharat Nirman have been given to AA category of approved Govt. Contractors. The contractors forfeit their guarantee money deposited with the GSRRDA if the construction time is beyond reasonable limits.

In **Himachal Pradesh**, the road projects were sanctioned by State Level Standing Committee (SLSC) keeping in view the core network and DPR verified by the STA and NRRDA then tender notice floated through newspapers having good circulation in state as well as neighbouring states.

In **Kerala** once tender was published, the Contractors send their quotations to the Department (Engineering wing of the District Panchayat). The sanction of road was awarded to the Contractor on the basis of the expertise in the field, background of the Contractor, on the execution of the previous work in time and also the lowest quotation among the other contractors.

In **Orissa**, after approval of DPR by Empowered Committee tenders were invited from A Class, Special Class and Super Class contractors and the contractor of lowest bidder who fulfils the tender norms and other conditions were selected for execution of work.

In **Rajasthan** state government selected those A Class contractors who had adequate experience.

In view of time over-run and price escalation, state authorities suggested that provision of allowance should be made in the tender for escalation of costs. Lower rates as compared to the approved ones should not be allowed as this may lead to compromise with quality. The price escalation should be linked with the cost of project to maintain the quality of roads. At present land acquisition is on voluntary basis, some compensation in this regard should be provided to speed up the work & improvement in scheme.

3.9 Findings

- 1) 86% of sample states (6 out of 7) followed National Rural Road Development Agency (NRRDA) Guidelines for implementing the programme while Rajasthan prepared state level guidelines along with the central guidelines.
- 2) In 57% of the sample states (4 out of 7), the proposals of MPs and MLAs, within the frame work of the guidelines were included in CNCPL, whereas in 29% of the sample states, MPs/ MLAs were taking part in the process of selection, listing priority of road and final approval of road works.
- 3) In 71% state authorities (5 out of 7) were reporting that selection of roads basically rests with the PRIs and identification of roads to be taken up were finalized from Panchayat/Zila Parishad.
- 4) In 43% sample states, Zila Pramukh, Pradhan & Sarpanch (PRIs) along with Department visited the PMGSY road works to carry out joint inspection.
- 5) In 36% districts, MPs/MLAs had visited the work site during their normal visit and monitored the progress of work.
- 6) In 64% selected district authorities reported that MPs & MLAs reviewed the CNCPL/ CUPL and suggested modifications/ additions which were taken into account.
- 7) In 57% sample districts the proposals were finally approved by Zila Parishad and District Planning Committee which was further adopted for construction.
- 8) In 43% of districts PRIs were actively participating in the selection of road and their Gram Panchayats were involved in transect walk procedures, motivating people to donate their land for the road.

Chapter 4

Coverage of Habitations

The modified targets of Bharat Nirman had proposed 1,46,185 kms of road length to be constructed in all rural habitations with a population of 1000+ persons in plain areas and every habitation of more than 500 persons in hilly and tribal areas by the year 2009. Further, to ensure full farm-to-market connectivity, it was proposed to upgrade 1, 94,132 kms of the existing 'associated through-routes'. In this regard, the guidelines indicated that the primary focus of the programme would be on construction of new roads. However, upgradation of existing roads would be permitted to be taken up under the programme so as to ensure that the roads remain all-weather roads.

Table-4.1(a): Physical Performance of Rural Road Scheme (New Connectivity) under Bharat Nirman (2005-06 to 2006-07)

State	Habitations with 1000+ Population				Habitations with 500+ Population			
	Habitations Covered (No.s)		Length (KM)		Habitations Covered (No.)		Length (KM)	
	T	A	T	A	T	A	T	A
Assam	1571	822	4909.25	1675	893	197	NA	NA
Bihar	133	25	340.12	102.3	24	5	30	6.5
Gujarat	NA	9	NA	NA	NA	572	NA	852.79
Himachal Pradesh	944	899	3925.72	5024	NA	NA	NA	NA
Kerala	6	31	13.6	49.25	55	57	95.97	79.57
Orissa	811	531	4193	3564	NA	344	NA	NA
Rajasthan	635	635	1975	2008	2121	2494	7693	8223.7
Grand Total	4100	2952	15356.7	12422	3093	3669	7818.97	9160.5
%	-	72%	-	80.9%	-	118.6%	-	117.2%

Note: T: Target
A: Achievement

4.1 State-wise Physical Progress in terms of Achievement of Targets

4.1.1 New Connectivity

During the study period, i.e., from the year 2005-06 to 2006-07, achievement of targets in new connectivity has been 72% in terms of habitations with 1000+ population covered, and 80.9% in terms of road length

constructed. The coverage in terms achievement of targets for habitations with 500+ population has been more than 100% both in terms of connectivity to habitations and road length constructed (118.6% and 117.2% respectively). These figures from **Table 4.1(a)** also point to the fact that connectivity too many habitations of 500+ population is also achieved along with those of 1000+ habitations, showing as overall net surplus achievement for the former.

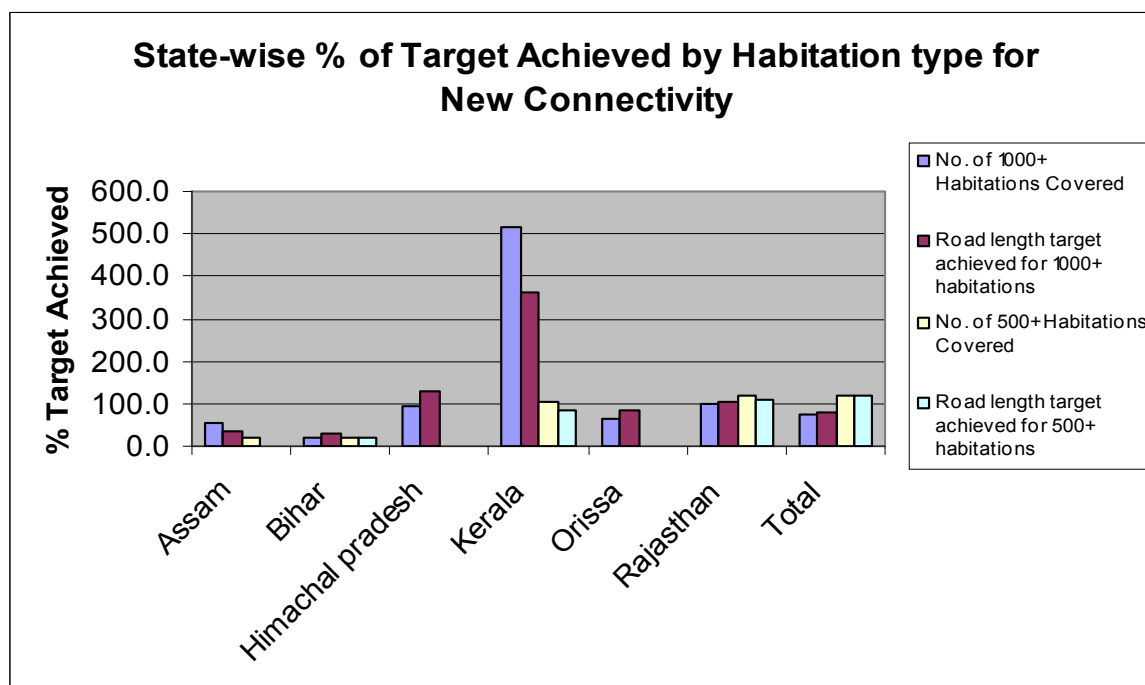


Chart-4.1

The state-wise differences in achievement of targets during the period are summarized in Chart-4.1. Assam and Bihar show the lowest figures, whereas the state of Kerala and Rajasthan show surplus achievement in the sample. The total achievement percentage in the sample states is inflated by the figures for the state of Kerala, where the number of habitations covered (as also the length of road constructed in kms) show huge surplus achievement. The sample state of Rajasthan shows surplus achievement of targets. If the average sample achievement figure is calculated after omitting the state of Kerala, it comes out to be **66.4%** for the total number of habitations covered and **75.8%** for the length of road covered in the 1000+ category. The same figures for habitations of 500+ populations are **53.5% and 70.5%** respectively which are significantly less than the totals calculated after including the state of Kerala.

4.1.2 Upgradation

The figures for achievement of targets in upgradation of roads are summarized in Table-4.1(b). The achievement of targets over all the 7 sample states come out to be 66.4% in terms of habitations covered and 67.4% in

terms of meeting the road length construction targets for 1000+ category. The same figures for the 500+ category are 28.2% and 7.3% respectively. This low figure for upgradation of roads in the 500+ habitation category may be due to the lack of maintenance of disaggregated data on coverage to habitations by size of population.

Table-4.1(b): Physical Performance of Rural Road Scheme (Upgradation) under Bharat Nirman (2005-06 to 2006-07)

State	Habitations with 1000+ Population				Habitations with 500+ Population			
	Habitations Covered (No.)		Length (Kms)		Habitations Covered (No.)		Length (Kms)	
	T	A	T	A	T	A	T	A
Assam	2	NA	13.46	NA	NA	NA	NA	NA
Bihar	885	620	1132.48	949.4	87	57	41.7	41.7
Gujarat	NA	NA	NA	NA	NA	NA	NA	NA
Himachal Pradesh	NA	NA	1515.92	1095.7	NA	NA	NA	NA
Kerala	NA	NA	255.1	NA	239	NA	532.52	NA
Orissa	NA	43	NA	NA	NA	35	NA	NA
Rajasthan	NA	NA	4764.54	3133.9	NA	NA	NA	NA
Grand Total	999	663	7681.5	5179	326	92	574.22	41.7
(%)	-	66.4%	-	67.4%		28.2%	-	7.3%

Note: T : Target
A : Achievement

Despite the widespread use of Online Management, Monitoring and Accounting System (OMMAS), records of population-wise coverage of habitations and length-wise coverage (Target and Achievement) to be completed were not available in many of the sample states (at the state level), namely, Gujarat, Himachal Pradesh and Orissa. Table 4.1(c) depicts that during the period from 2000-01 to 2004-05, against a target of 4546 Km, in total 17925 Kms. of roads (new connectivity where the state targets and achievements both are mentioned) was completed in the selected states connecting some 6409 habitations having with over 1000 population under PMGSY. This was 13378 (394.2%) Km. more than the target whereas Table 4.1(a) reveals that during the period 2005-06 to 2006-07 against the target of 15357 Km. the achievement was only 12422 Km. which was 2935 (20%) less than the target under Bharat Nirman for 2952 habitations.

**Table-4.1(c): State-wise Physical Performance of Rural Road Scheme
(New Connectivity/ Upgradation) under PMGSY during the period of 2000-01 to
2004-05**

State	New Connectivity (With 1000+ population)				Upgradation (With 1000+ population)				New Connectivity (With 500+ population)				Upgradation (With 500+ population)			
	Habit- ations Covered (No.)		Length (Kms)		Habit- ations Covered (No.)		Habitations Covered		Length (Kms)		Length (Kms)		Habit- ations Covered		Length (Kms)	
	T	A	T	A	T	A	T	A	T	A	T	A	T	A	T	A
Assam	1173	1161	2321	2292	1	1	2.74	2.74	394	390	0	0.00	0	0	0.00	0.00
Bihar	1531	1205	1856	1435		0	331.29	310.7	262	172	0	0.00	0	0	0.00	0.00
Gujarat*	NA	370	NA	2428	0	61	0.00	0.00	0	592	0	0.00	0	180	0.00	0.00
Himachal Pradesh	41	688	188	1316	0	0	0.00	0.00	0	0	0	0.00	0	0	0.00	0.00
Kerala	112	51	181	115	0	0	0.00	0.00	252	134	432.46	255.18	11	10	22.59	19.53
Orissa	NA	933	NA	3092	0	88	0.00	0.00	0	376	0.00	0.00	0	47	0.00	0.00
Rajasthan	NA	2001	NA	7247	0	259	0.00	768.3	0	728	0.00	4211.73	0	0	0.00	0.00
Total	2857	6409	4546	17925	1	409	334.03	1081.74	908	2392	432.46	4466.73	11	237	22.59	19.53

T=Target, A=Achievement*

NOTE:

- In **Gujarat** year wise targets are not fixed and state authorities mentioned that length can not be bifurcate in respect to specific habitation as every road covered different populated group of habitations.
- In **Himachal Pradesh, due to no** fixed target of MoRD, GOI upto the year 2004-05, there was no fixed state target. **Separate population-wise figures of no. of habitations covered and length in kms are not maintained by the state Authorities.** Habitation wise separate targets can not be given as a single road passes through habitations of various categories. In selected districts also consolidated figures for length of the roads (Target as well as Achievement) are shown in the rows under habitation with 1000+ and 500+ population, as a single road passes through habitations of various categories.
- Achievements for 2005-06 are more as they include the projects started in previous years (2001-05).
- The target and achievement for Bharat Nirman are included in the target and achievements under PMGSY for the year 2005-06 & 2006-07 as Bharat Nirman is a targeted programme and it includes Habitations with 500+only.
- **5.** In **Orissa** under PMGSY (i.e., from 2000-01 to 2004-05, there was no such state specific targets fixed, so the figures was not maintained at State Level.
- In the table, length coverage in case of habitations of 500+ populations incidentally covered with habitation 1000+ population, hence no specific length of roads being earmarked for the habitation

4.2 District-wise Physical Progress in terms of Achievement of Targets

In **Bihar**, no new connectivity work was undertaken in sample districts of the state for 500+ habitations during the period of 2005-06 to 2006-07 as indicated in Table 4.2(a) and 4.2 (b) due to freshly allotted work.

In **Gujarat**, no work was undertaken in selected districts during 2003-04 to 2004-05 and 2005-06 to 2006-07 for habitations of 1000+ population because of few cases pending for land acquisition or work in progress as can be seen from Tables 4.1(a) and(b) of state level and also confirm from Table 4.2(a) and (b) of district level data. State authorities also reported that length can not be bifurcated in respect to specific habitation as every road covered different populated group of habitations.

In **Kerala** state, new connectivity provided to 279 habitations having population 1000+ against targeted 440 habitations covering a length of 511.790 km (68%) against targeted 752.797 kms during the period 2000-01 to 2006-07. Coverage of both new connectivity and upgradation of the roads were either nil or less than the targeted habitation as well as length due to: (i) the density of population was high and the land was scarce therefore in certain places it was very difficult to follow the basic norm of constructing minimum of 8 meter width , for new connectivity as well as up gradation under the scheme, (ii) the Contractors were not willing to take up the work as the quoting of PWD rates were not high enough to comply by the quality norms of PWD (iii) the unskilled workers wage was Rs.140/- and skilled workers wage was Rs.190/-. At this rate, no worker was willing to do the work. Therefore, adhering to the rate prescribed by the Department it became difficult for the Contractors to take up the work. The acquisition of land at free of cost for the construction of roads, measurements, detailed reports, accepting the tender by the contractors and getting back the money for work by the Contractors were major factors responsible for the delay in executing the work in Kerala state.

Table-4.2(a) District wise Physical Performance of Rural Road Scheme under PMGSY during the period of 2000-01 to 2004-05

State	No. of Dist.s selected for the study	Physical Performance under PMGSY during the period 2000-01 to 2004-05 as reported by District authorities:															
		New Connectivity (With 1000+ population)				Up gradation (With 1000+ population)				New Connectivity (With 500+ population)				Up gradation (With 500+ population)			
		Habitations Covered (No.)		Length (Kms)		Habitations Covered (No.)		Length (Kms)		Habitations Covered (No.)		Length (Kms)		Habitations Covered (No.)		Length (Kms)	
		T	A	T	A	T	A	T	A	T	A	T	A	T	A	T	A
Assam	2	181	181	294.84	294.84	0	0	0	0	50	50	0	0	0	0	0	0
			[100.00%]		[100.00%]		[0.00%]		[0.00%]		[100.00%]		[0.00%]		[0.00%]		[0.00%]
Bihar	2	90	74	117.99	94.12	11	7	82.88	26.68	0	0	0	0	2	2	26.68	26.68
			[82.22%]		[79.77%]		[63.64%]		[32.19%]		[0.00%]		[0.00%]		[100.00%]		[100.00%]
Gujarat	2	114	114	198.68	188.63	2	2	2.5	2.5	69	69	82.68	82.68	2	2	2.55	2.55
			[100.00%]		[94.94%]		[100.00%]		[100.00%]		[100.00%]		[100.00%]		[100.00%]		[100.00%]
Himachal Pradesh	2	42	34	597.82	192.4	0	0	0	0	147	113	235.54	206.61	0	0	0	0
			[80.95%]		[32.18%]		[0.00%]		[0.00%]		[76.87%]		[87.72%]		[0.00%]		[0.00%]
Kerala	2	54	26	59.38	22.61	2	2	2.6	2.6	44	36	49.55	36.36	4	4	4.59	4.59
			[48.15%]		[38.08%]		[100.00%]		[100.00%]		[81.82%]		[73.38%]		[100.00%]		[100.00%]
Orissa	2	148	141	470.21	440.45	13	12	44.26	40.79	32	33	59.51	76.45	7	7	16.4	20.8
			[95.27%]		[93.67%]		[92.31%]		[92.16%]		[-]		[-]		[100.00%]		[-]
Rajasthan	2	352	348	1529.28	1472.74	15	14	81.5	75.05	22	22	83.83	83.53	0	0	0	0
			[98.86%]		[96.30%]		[93.33%]		[92.09%]		[100.00%]		[99.64%]		[0.00%]		[0.00%]
Grand Total (%)	14	981	918	3268.2	2705.79	43	37	213.7	147.62	364	323	511.11	485.63	15	15	50.22	54.62
			[93.58%]		[82.79%]		[86.05%]		[69.07%]		[88.74%]		[95.01%]		[100.00%]		[-]

In **Rajasthan**, no upgradation work was taken up in habitations with 500+ population during 2000-01 to 2004-05 and also no new work was undertaken during 2005-06 to 2006-07 for habitation with 1000+ population in selected districts as can be seen in Table 4.6(a) and (b). Besides that from overall available data, it is observed that the target of new connectivity covering habitation with 500+ population was increased from 364 in PMGSY to 846 in Bharat Nirman in selected districts similarly covering of habitation 908 was also increased 3093 during the corresponding years at State level. Similarly achievements regarding length were also increased from 485 kms to 1640 kms in corresponding period in the sample districts. This phenomenon was reflected at state level also as targeted length increased from 3367 kms in PMGSY to 9160 kms in Bharat Nirman during the same period.

4.3 Block-wise Physical Progress in terms of Achievement of Targets

A glance at the physical progress throws up heterogeneity across the sample blocks within the selected districts. It may be noted from Table 4.3 that some states like Gujarat did not construct new roads for habitation having population 1000+ during 2005-06 and 2006-07 but in the same states new connectivity provided near the target, i.e., 105.9 Kms to 138 Kms (77%) habitation having 500+ population in the sample blocks. In Kerala the work was completed in 2004-05 and no new work was undertaken for habitation having 1000+ or 500+ population during 2005-06 and 2006-07 in sample blocks of the state. While sample blocks of other states covered 258 (79%) Kms length against targeted 324.7 Kms for providing new connectivity to habitation 1000+ population and 917.3 Kms (90%) against 1017 Kms for 288 habitation with 500+ population.

It is also noted that **year-wise annual plan not prepared at state, district and block level**; therefore, most of the states, like Gujarat, Himachal Pradesh, Orissa, etc. provided consolidated figures for target and achievements for length of road covered and no. of habitation as per population criterion. As they were unable to provide separate figures, hence annual plan must be prepared.

Table-4.2(b) District wise Physical Performance of Rural Road Scheme under Bharat Nirman Programme during the period of 2005-06 to 2006-07

Sl No.	State	No. of Districts Selected for the Study	Physical Performance under Bharat Nirman during the period 2005-06 to 2006-07 as reported by District authorities:															
			New Connectivity (With 1000+ population)				Up gradation (With 1000+ population)				New Connectivity (With 500+ population)				Up gradation (With 500+ population)			
			Habitations Covered (No.)		Length (Kms)		Habitations Covered (No.)		Length (Kms)		Habitations Covered (No.)		Length (Kms)		Habitations Covered (No.)		Length (Kms)	
			T	A	T	A	T	A	T	A	T	A	T	A	T	A	T	A
1	Assam	2	301	162 [53.82%]	689.4	352.44 [51.13%]	0	0	0	0	109	89 [81.65%]	0	0	0	0	0	0
2	Bihar	2	0	0 [0.00%]	35.4	4 [11.30%]	94	78 [82.98%]	408.68	258.75 [63.31%]	0	0	0	0	31	31 [100.00%]	184.48	184.48 [100.00%]
3	Gujarat	2	0	0 [0.00%]	0	0 [0.00%]	0	0	0	0	167	167 [100.00%]	280.71	231.38 [82.43%]	0	0	26.26	25.55 [97.30%]
4	Himachal Pradesh	2	6	2 [33.33%]	668	168.68 [25.25%]	8	1 [12.50%]	54.9	6 [10.93%]	163	77 [47.24%]	188.59	120.83 [64.07%]	115	7 [6.09%]	126.14	14.4 [11.42%]
5	Kerala	2	5	0 [0.00%]	8.31	0 [0.00%]	4	0 [0.00%]	10.33	0 [0.00%]	8	0 [0.00%]	12.8	0 [0.00%]	32	0 [0.00%]	49.03	0 [0.00%]
6	Orissa	2	126	92 [73.02%]	433.1	356.95 [82.41%]	22	14 [63.64%]	156.29	92.72 [59.33%]	26	8 [30.77%]	23.62	31.58 [-]	1	0 [0.00%]	4.39	4.02 [91.57%]
7	Rajasthan	2	0	0 [0.00%]	0	0 [0.00%]	0	0	0	0	373	341 [91.42%]	1406.1	1255.94 [89.32%]	0	0	0	0
-	Grand Total (%)	14	438	256 [58.45%]	1834	882.07 [48.09%]	128	93 [72.66%]	630.2	357.47 [56.72%]	846	682 [80.61%]	1911.9	1639.73 [85.77%]	179	38 [21.23%]	390.3	228.45 [58.53%]

**Table-4.3 Physical Performance (Target and Achievement) of
New Connectivity/ Upgradation of Roads in Sample Blocks
during 2005-06 to 2006-07**

State	No. of Blocks selected for the study	Physical Performance (Target and Achievement)															
		New Connectivity (With 1000+ population)				Up gradation (With 1000+ population)				New Connectivity (With 500 + population)				Up gradation (With 500+ population)			
		Habitations Covered (No.)		Length (Kms)		Habitations Covered (No.)		Length (Kms)		Habitations Covered (No.)		Length (Kms)		Habitations Covered (No.)		Length (Kms)	
		T	A	T	A	T	A	T	A	T	A	T	A	T	A	T	A
Assam	4	60	43	120.6	85.11	0	0	0	0	14	25	0	0	0	0	0	0
Bihar	3	14	7	25.72	12.15	0	0	0	0	0	0	0	0	0	0	0	0
Gujarat	4	0	0	0	0	0	0	0	0	77	77	138	105.9	0	0	13	13
H. P.	4	0	0	0	0	0	0	0	0	26	23	114	109.3	2	2	12	12
Kerala	4	0	0	0	0	1	0	2	0	0	0	0	0	1	0	2	0
Orissa	4	42	37	96.63	79.1	6	3	50	29	14	6	44.8	16.61	4	3	4	4
Rajas- than	4	16	16	81.7	81.65	0	0	0	0	162	157	720	685.4	0	0	0	0
		132	103	324.7	258	7	3	52	29	293	288	1017	917.3	7	5	31	29
		-	78.03	-	-	-	43	-	-	-	98.3	-	-	-	71	-	-

4.4 Detailed Analysis of Connectivity Provided on the date of Visit

Table 4.4(a) gives details of the coverage achieved in the sample states up till the field of visit, i.e., April 2008. It was observed that the new connectivity provided to 12786 (97%) habitations having 500+ populations, while only 7441 (53%) habitations with 1000+ populations were covered against the targeted 14020 eligible habitations in all sample states. Connectivity through upgradation to all weather roads was achieved for further 20 % habitations with 1000+ population, while only 2% in habitations with 500+ populations were connected through this method. The rationale behind this was to give priority to provide new connectivity to habitations having 1000+ populations and thereafter upgradation work taken under Bharat Nirman. Therefore, in all, if both upgradation and new connectivity were taken into account, about 73% of the target 1000+ habitations had been connected till the date of field visit.

Table-4.4(a): Status of Coverage under Rural Roads in Sample States as on date of Visit (April, 2008)

State	Eligible Habitations Covered under:									
	Total 1000+ Habitations	New Connectivity (With 1000+ Population)		Up gradation (With 1000+ Population)		Total 500+ Habitations	New Connectivity (With 500+ Population)		Up gradation (With 500+ Population)	
		No.	Length (kms)	No.	Length (kms)		No.	Length (kms)	No.	Length (kms)
Assam	7323	1983	3966.41	1	2.74	-	587*	-	-	-
Bihar	1337	563	2693.94	774	2575.52	219	46	*	173	*
Gujarat	442	409	2964.95	-	-*	2065	1614	-	-	-*
Himachal Pradesh	236	230	8267.48	1645	3024.71	3625**	2050**	-	-	-
Kerala	118	82	163.87	0	0	304	191	334.78	10	19.53
Orissa	1595	1464	5745.98	131	910.25	802	720	-	82	-
Rajasthan	2969	2710	9748.19	259	804.55	6199	6189	19657.66	10	12.75
Grand Total	14020	7441 53.07%	33550.82	2810 20.04%	7317.77	13214	11397 86.2%	19992.44	275 2.08%	32.28

NOTE:

*1. In Assam 587 habitations with a population of 500+ incidentally connected while providing connectivity to habitation with 1000+ population hence their connectivity does not add to total roads constructed.

2. In Bihar as several agencies involved in rural road works the achievement not provided by them and some are merged lengths with habitation having 1000+ population.

3. In Gujarat separate details are not maintained for upgraded roads, as every road covered different populated group of habitations, hence no specific no. of habitations or length of roads being earmarked for new connectivity as well as up gradation of rural roads in the state.

**4. In Himachal Pradesh also separate population-wise figures no., of habitations covered and road length (new connectivity and up gradation) are not maintained by state authority. It is also observed that out of 3625 habitations 2643 are from habitation having 250-499 population and eligible under PMGSY (which remained operational upto March 2005), most of them 1121 habitations incidentally covered and provided road connectivity (only Katcha Road, i.e., Stage-I) with 929 habitations those from 500+ population but for remaining 1575 DPR under preparation and record for length not available with authorities.

The same aggregate figure for 500+ habitations was about 99 %. It is nottable that some 500+ habitations also got connected along with the 1000+ habitations swelling the figure for the category.

The table below summarises the coverage status in the sample districts as on the date of visit.

Table-4.4(b): Status of Coverage under Rural Roads in Sample Districts as on date of visit (April, 2008)

State	No. of Districts Selected	Eligible Habitations covered under:									
		Total	New Connectivity (With 1000+ Population)		Up gradation (With 1000+ opulation)		Total	New Connectivity (With 500+ population)		Up gradation (With 500+ population)	
			No	Length (kms)	No	Length (kms)		No	Length (kms)	No	Length (kms)
Assam	2	968	482	968.21	0	0	407	137	297.26	0	0
Bihar	2	33	9	87.67	24	243.48	120	17	56	30	225
Gujarat	2	330	115	200.29	2	2.5	1274	280	447.43	2	28.81
H.P.	2	55	47	474.28	3	6	285	193	234.79	18	14.4
Kerala	2	59	37	42.21	6	12.93	52	36	40.17	12	14.61
Orissa	2	346	307	1015.53	47	251.96	700	126	113.42	8	8.42
Rajasthan	2	647	213	998.35	14	31.35	896	683	3320.38	0	0
Total & Percentage	14	2438	1210 (49.6%)	3786.54	96 (3.9%)	548.22	3734	1472 (39.4%)	4509.45	70 (1.9%)	291.24

Table 4.4(b) shows that as on the date of field visit, out of a total of 2438 eligible habitations in all the 14 sample districts, 1210 (49.63%) habitations with 1000+ populations were reported to be provided with new connectivity covering a length 3786.54 kms. The upgradation work was taken up only in 39.4% and 1.9% habitations having population 1000+ and 500+ respectively.

Table-4.4(c): Status of Coverage under Rural Blocks in Sample Districts as on date of visit (April, 2008)

States	No. of Blocks Selected	1000+ Habitations					500+ Habitations				
		Total No. of Eligible Habitations	Covered till now under New Connectivity	Length Covered under New Connectivity (kms)	Covered under Upgradation	Length Covered under Upgradation (kms)	Total No. of Eligible Habitations	Covered till now under New Connectivity	Length Covered under New Connectivity (kms)	Covered under Upgradation	Length Covered under Upgradation (kms)
Assam	4	142	87	162.91	0	0	87	31	0	0	0
Bihar	3	0	1	1.8	0	0	0	1	0	0	0
Gujarat	4	34	34	78.13	1	1	136	123	217.83	1	22.9
Himachal Pradesh	4	7	6	22.84	0	0	73	62	289.73	2	12
Kerala	4	10	7	6.3	3	4.57	22	17	13.59	5	6.45
Orissa	4	175	50	195.04	3	24	149	108	341.3	0	0
Rajasthan	4	75	70	192.88	11	69.99	104	37	56.11	5	8.9
Grand Total	27	443	255	659.9	18	99.56	571	379	918.56	13	50.25
%	-		57.5%	-	4.0%	-	-	66.4%	-	2.3%	-

Note: The date of field visit was April 2008

Similarly, **Table 4.4(c)** summarises the findings at the block level. As one can see, in all the 27 sample blocks, 57.56% of the eligible habitations could be connected through new connectivity in the 1000+ category (covering almost 650 kms of rural roads). A further 4% of the habitations could be connected upgrading the existing roads to all weather roads for the same population category. The same figures for the habitations of 500+ category stood at 66.37% and 2.27% respectively.

A further look at the variations in terms of connectivity achieved at all the levels (viz. state, district and block levels), reveal some common characteristics as shown in the **Table 4.4(d)**. Assam and Bihar show very low levels of connectivity achieved with figures of 27.1% and 42.1% at the state level under new connectivity for habitations with 1000+ populations. The dismal figures are repeated at the Sample Block and the Sample District levels from the table below with the connectivity figures for these states falling well below the averages at those levels. Overall, the average figures under new connectivity for 1000+ habitations are 73.1%, 54.5% and 62.7%, at the state, district and block levels respectively.

Table 4.4(d): Summary of connectivity achieved in terms of percentage of eligible habitations covered as on the date of visit (April, 2008)

State	Level	1000+ Habitations		500+ Habitations	
		% Covered under New Connectivity	% Covered Under Upgradation	% Covered Under New Connectivity	% Covered Under Upgradation
Assam	State	27.1	0.0	0.0	0.0
Bihar	State	42.1	57.9	21.0	79.0
Gujarat	State	92.5	0.0	78.2	0.0
Himachal Pradesh	State	97.5	0.0	0.0	0.0
Kerala	State	69.5	0.0	62.8	3.3
Orissa	State	91.8	8.2	89.8	10.2
Rajasthan	State	91.3	8.7	99.8	0.2
State Level Average		73.1	10.7	50.2	13.2
Assam	District	49.8	0.0	33.7	0.0
Bihar	District	27.3	72.7	14.2	25.0
Gujarat	District	34.8	0.6	22.0	0.2
Himachal Pradesh	District	85.5	5.5	67.7	6.3
Kerala	District	62.7	10.2	69.2	23.1
Orissa	District	88.7	13.6	18.0	1.1
Rajasthan	District	32.9	2.2	76.2	0.0
District Level Average		54.5	15.0	43.0	8.0
Assam	Block	61.3	0.0	35.6	0.0
Bihar	Block	0.0	0.0	0.0	0.0
Gujarat	Block	100.0	2.9	90.4	0.7
Himachal Pradesh	Block	85.7	0.0	84.9	2.7
Kerala	Block	70.0	30.0	77.3	22.7
Orissa	Block	28.6	1.7	72.5	0.0
Rajasthan	Block	93.3	14.7	35.6	4.8
Block Level Average		62.7	7.0	56.6	4.4

Two implications can be surmised by observing the variations in terms of achievement between the different levels. First of all, intra-state variations are there and this explains the differences. Secondly, some blocks have done really well in our sample.

While constructing the roads certain essential aspects were not taken care of as given in box II

(Box II)

Aspects of Roads Not Taken Care

- Many of the Bharat Nirman roads complaint of absence of any provision of Drainage constructed. Jajori-Barmanipur and Sabukdhara-Dhing, Dalangghat, Nagaon, Gnormora - Basmatta, Lahwal, Dibrugarh Assam were among them. Speed breaker provision was lacking also lacking in the Gnormora – Basmatta connectivity.
- Beneficairy of Jajori-Barmanipur connectivity in Nagaon Assam informed that no speed breakers were installed on the road in front of the mosque, temple and schools, etc.
- Pirpainty Dharmshala to Gobindpur via Barbaryiya nala margang dhar & Athaniya Ramnagar, pirpainty Khalgaon, Bhagalpur, Bihar also complained of missing Drainage. It was suggested that in these projects along with Kahua –Ati- Kholopia, Dalangghat, Nagaon, Assam felt that height of road should be raised to be able to survive in the floods.
- Devidhar –Ranol connectivity, Chhauhra, Shimla, Himachal Pradesh Pradesh felt the requirement of Protection walls to protect orchards from land slides. Some of the turning points were also suggested to be widened.
- Devidhar – Sunhi Khas to Pandol, Nagrota Bagwan, Kangra and Jhatwari to Gwas, Chhauhra, Shimla, Himachal Pradesh Pradesh felt the need of Culverts, sidewalls and retention walls during the construction of the road. They felt the Quality was not good. The Bridge near Gawas had been constructed in proper manner.
- Khwaspur main road to Dilouri Durg Asthan via Pheku tola , Pirpainty Khalgaon, in Bhagalpur, Bihar The bridge needed stone boundary so that water during floods does not enter the road and stop the access to the habitation.

4.5 Time taken in Completion of Roads and Reasons thereof

Tables the table below explain the reasons for the gap between planned and actual completion of work. The time allocated for completion of projects under the Rural Road component of Bharat Nirman was 9 months with 3

months extension allowed in case of hilly districts. The Table 4.5(a) below shows the time taken to complete for various roads in the sample.

Table 4.5(a): Time taken for completing the Roads (as Percentage of Total Roads taken in each Sample State)

States	No. of Roads in the Sample	Scheme	Unfinished %	Time Taken for Completion %			
				1-9 Months	9-12 Months	12-18 Months	beyond 18 Months
Assam	20	PMGSY	0	0	10	40	10
		BN	30	0	5	0	5
Bihar	18	PMGSY	0	5.56	0	0	16.67
		BN		11.11	16.67	44.44	5.56
Gujarat	20	PMGSY	0	5	0	25	10
		BN	0	40	0	20	0
Himachal Pradesh	20	PMGSY	0	5	5	5	10
		BN	30	15	10	15	5
Kerala	20	PMGSY	0	15	0	5	80
		BN	0	0	0	0	0
Rajasthan	20	PMGSY	0	5	15	0	0
		BN	0	70	5	5	0
Orissa	20	PMGSY	0	15	5	15	25
		BN	0	0		30	10
Total	138	PMGSY	0	7.25	5.07	13.77	21.74
		BN	7.97	20.29	7.97	12.32	3.62

Overall, only 20.3% of the roads in our sample (from a total of 138 roads) were complete on time, i.e., within 9 months. This happens to be an improvement from the PMGSY period, where that figure stood at 7.25%. A further 8% of the roads took between 9-12 months and some 16% of the roads took beyond a year's time. What was worrying is the high percentage (8%) of the incomplete roads. These incomplete roads were there in Assam and Himachal Pradesh. Rajasthan was the best performing state under Bharat Nirman with almost 70% of the 20 roads selected being complete on time.

Table 4.5(b) explains the reasons for the gap between planned and actual completion of work. Three main problems in completion of project were of adverse weather condition around 37% projects faced that (majority of them were from Assam, Bihar and Orissa); delay in acquisition of land which affected 13.8% of projects; and non-availability of labour and material affecting 8% of projects.

Table 4.5(b): Table-State wise Reasons for Gap in Planned and Actual Completion of Roads those Selected under Evaluation Study

Sl. No.	State	Total Selected Roads	Reasons for Gap in Planned and Actual Completion of Work							
			Delay in Acquisition of land	Problem Relating to Construction of Diversion Road	Guidelines were not Available	Under one Contractor many Works under Progress at same time	Adverse site Condition (Heavy rainfall snowfall in Working season, Communal riot)	No Transportation	Non Availability of Labour & Material	Others
1.	Assam	20	1	1	0	0	14	0	0	0
2.	Bihar	18	0	0	0	0	12	6	1	2
3.	Gujarat	20	0	0	0	5	5	0	5	6
4.	Himachal Pradesh	20	0	0	2*	0	5*	0	4	3
5.	Kerala	20	17	0	0	0	3	0	1	0
6.	Orissa	20	1	0	0	0	15	1	0	1
7.	Rajasthan	20	0	0	0	0	0	0	0	0
	Grand Total	138	19	1	2	5	54	7	11	12
			[13.77%]	[00.72%]	[01.45%]	[03.62%]	[39.13%]	[05.07%]	[07.97%]	[08.69%]

* Seven projects were completed by taking more than one year time.

Few Instance of delays are Given in Box III Including above Reasons and other Case Specific Reasons

**(Box III)
Reasons for Delay**

- In Assam work was delayed in Lahowal block as it was a high rainfall area. Dibrugarh insurgency hampered the work. It was informed by one of the contractor that anti social element forcibly took construction material.
- In one of the case contractor gave two more culverts on his own due to pressure of local people.
- Two of the projects evaluated informed that delay was due to major bridge by NABARD under RIDF scheme (Rural Infrastructure development fund) which was not completed. Unforeseen and inevitable reason. Romai- Saolikota road, Lahwal in Dibrugarh Assam the reason of delay in work was first stage construction was constructed in one.
- In Kerala, Ex-servicemen colony road, Chalakudi, Trissur work was initiated in October, 2003 and completed on March 2006. For widening the road Prolonged litigation caused considerable delay.

4.6 Maintenance of Rural Roads

Some roads under selection were newly constructed or still under construction, hence, did not require maintenance, but for remaining roads maintenance was totally ignored by the contractors. Whether provision of separate budget for maintenance of all weather rural roads was made or not during the period of 2000-01 to 2006-07 was assessed at different levels. From Table 4.6, it is observed that 43% selected states reported that there was no provision of fund for maintenance during the period of PMGSY but 57% states reported that during Bharat Nirman period, funds were provided for maintenance of roads. While 71% district authorities of the selected states reported that separate allocation for maintenance were not made district wise. During PMGSY and Bharat Nirman either the periodical repair funds were provided to PIUs under yearly budget allocation at state government or the contractor had to undertake maintenance from his own funds for a period of five years after the completion of construction work of the road. However from Phase-3, separate provision has been made for maintenance. 25% sample Block Level authorities also reported the same.

The state and district authorities of **Assam** reported that in case of work under PMGSY for 2000-01 and 2001-02 the routine maintenance was inclusive of the rates quoted by the contractors and there was no separate provision under maintenance. For routine maintenance of 2003-04 works, the contractors were to get rates at estimated rates per km per year for maintenance of road after completion. For routine maintenance of 2004-05 works and works of subsequent phases, the contractors had quoted their own rates per km per year for 5 years maintenance of road after completion. Accordingly, provisions had been made in the annual budget for funds for maintenance of PMGSY roads. District authorities of the state mentioned that funds for maintenance from 2000-01 to 2003-04 were not provided by government but as per the agreement responsibility of maintenance of the road lied with the contractor. From 2004-05 to 2006-07 maintenance cost was included in the Bids (BOQ) for 5 years. In **Bihar** funds for maintenance under PMGSY were not provided separately, but during Bharat Nirman there was a provision of maintenance of roads as reported by state authorities, but one of the district informed availability of funds during PMGSY and second district denied availability for both the periods. Block authorities did not report the same.

Table 4.6: Availability of Funds for Maintenance under PMGSY and Bharat Nirman during 2000-01 to 2006-07

Sl. No.	State	Whether provision of separate budget for maintenance made at:											
		State Level during the Period:				District Level during the Period:				Block Level during the Period:			
		2000-01 to 2004-05		2005-06 to 2006-07		2000-01 to 2004-05		2005-06 to 2006-07		2000-01 to 2004-05		2005-06 to 2006-07	
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
1.	Assam	-	1	1	-	-	2	-	2	n/a	n/a	-	-
2.	Bihar	-	1	1	-	1	1	-	2	n/a	n/a	-	-
3.	Gujarat	1	-	1	-	2	-	2	-	n/a	n/a	3	-
4.	Himachal Pradesh	-	1	-	1	-	2	-	2	n/a	n/a	-	-
5.	Kerala	n/a	n/a	n/a	n/a	-	2	-	2	n/a	n/a	-	-
6.	Orissa	n/a	n/a	n/a	n/a	-	2	-	2	n/a	n/a	-	-
7.	Rajasthan	n/a	n/a	1	-	1	1	2	-	4	-	4	-
Total		1	3	4	1	4	10	4	10	4	-	7	-
% to total of selected nos.		14	43	57	14	29	71	29	71	14	-	25	-

* n/a data not available.

In **Gujarat** state it is observed that completed roads in PMGSY Phase- 1 & 2 were to be maintained by contractor free of cost for five years as per tender agreement. After five years, these roads would be maintained by PIUs. Road and Building Department would give 100% grant for maintenance. For phase 3,4,5,6, and 7 as per agreement of SBD, contractor would carry out maintenance and payment would be made by Gujarat State Rural Road Development Agency through PIU. Hence provisions in the state budget had been made only from 2003-04. Selected districts authorities also reported that there was no separate provision for maintenance for PMGSY works during Phase I and II as the contractor had to undertake maintenance from his own funds for a period of five years after the construction of the road. However from Phase-3, separate provision had been made for maintenance. Block authorities too reported the same.

In **Himachal Pradesh** no separate funds were allocated for maintenance. PWD was maintaining all the roads constructed under PMGSY/Bharat Nirman from the consolidated fund of the state govt. allocated in the budget for maintenance of state roads. District authorities also informed that periodical repair was provided to PIUs under yearly budget allocation to state government. This allocation was called as Annual Maintenance fund and also included the salary of the PWD laborers appointed in that PIU. PMGSY works too were maintained by these funds separate allocation to district for maintenance of PMGSY roads was not done.

In **Kerala** authorities of State, District and Block level informed that no fund was allotted for maintenance as can be seen in Table 4.10.

As per Table 4.6 in **Orissa** both state and district authorities informed that separate budget for maintenance created in corpus fund under OSRRA. This was for maintenance of Phase I and II works.

In **Rajasthan** no separate fund for maintenance had been allocated but state govt. was keeping 6.5% of total payments of contractor as deposit for next 5 years under PMGSY. State govt. provided 4.5 % of total cost of roads under Bharat Nirman for repair as reported by district authorities.

In depth Focus Group Discussions (FGDs) during the survey have revealed some instances of roads under new connectivity not being able to provide their intended benefits to the surrounding habitations due to improper planning whereby the roads do not reach the habitations concerned fully. These instances have been termed as “Missing Links” and have been summarized in Box IV.

(Box IV)
Missing Links:

In some projects it was felt that roads failed to generate desired connectivity effect due to omission in the plans to include some region in the road route, or because of the absence of a section of road.

- In *Himachal Pradesh, Shimla, block Chhauhra* a part of the road, measuring around 100 meters was not constructed which is hampering proper utility of road.
- *PWD mohar Santhalitola to Bhallu Sujan via Pankheria, Khalgaon, Bhagalpur, and Bihar.*- Quality of road was good but it was shorter in length by almost 3 kms. The local market to village connectivity was not established.
- Similarly, for *Venpagal LPS Road, Athiyanoor, Thiruvananthpruam, Kerala*- no impact on ease in transportation of farm products have been reported. Had it been extended 500 meters by slightly deviating from the existing location to Poetteil Devi temple road it would have been more effective for farm to market connectivity and connecting them to the nearby Neyattinkara town. Although it had positive impact since before the construction of the road, the area (roads) would get inundated during floods. Patients were carried on cots and children were going to school by boats through the adjoining Neyyar River. Further, employment opportunities were very less prior to the paving of the road. But, it was felt that had it been extended by 500 meters towards Neyattinkara Parasala it would have been effective in rainy season too and would have served the role of an all weather road. At *Ambalakavu- Udhalakkavu, in Puzhakkal, Trissur, Kerala*, the road was restricted to 1.01 km. It was felt that lengthening of the road by another 150 would have made it more useful for them.
- *Usarapada road, Dahod, Gujarat*: A patch of 650 metres of kutchra road on railway land was not constructed as the railways were not permitting road construction on their land.

Contd (Box IV)...

- In Nalanda, Bihar, NH31-to Shyamnagar via Lakhrama Pachuri(PMGSY) connectivity was not effective as the bridge connecting this particular road to NH was broken rendering it virtually defunct. Another upgradation project in Nalanda Andwas -Dharahara road was not very effective as a stretch of 2 km connecting this road to the main road has not been included in this project. At PWD Mohar Santhalitola to Bhallu Sujan Via Pankheria, Khalgaon, Bhagalpur, Bihar, the quality of road was good but it was shorter in length by almost 3 kms. So, the road did not connect to the local market and thus the connectivity did not benefit villagers as much as desired. At Kanjha Ghutiyant to Chandika Asthan, Khalgaon, in Bhagalpur the purpose of ensuring market connectivity was defeated as the Block Market, which was still at a distance of almost 15 kms, was not connected by the road.
- Habitations near Sabukdhara-Dhing road, Dalangghat, Nagaon, Assam felt that the length of the road should have been 3 km (it was only 1 km then). New connectivity at Jajori-Barmanipur needed to be bit longer as paving of only 0.75 km of road had negligible effect. It was found that the road from Bordowa to Batamari, Batadrava, in Nagaon was not very effective as there is only wooden a bridge was which was not a part of the road work and hence acted as a bottleneck for movement of heavy motorized traffic.
- In Rajasthan, both the studied districts asked for constructing linking roads. In case of the road from NH8 to Chundari in block Silora, Ajmer, it was felt that a road between Chundari to Tiloniya village should have been constructed to connect the villages to the nearest market for agricultural produce, Kishangarh Mandi. In Peesangan block, the FGD participants raised the issue of Kaklana to Lachhipura connectivity could be extended to a bit so that five adjoining villages would be connected in row.

Chapter 5

Quality Control and Supervision of Works

5.1 Institutional Mechanism for Quality Control and Maintenance

Quality control and maintenance of rural roads is a state subject and thus ensuring that the roads constructed are up to the quality norms set beforehand is the responsibility of the state governments who are implementing the programme. The 3-tier quality control mechanism envisaged for PMGSY has been carried over to the Rural Roads component of the Bharat Nirman Programme. The mechanism followed is as follows:

- (i) The first tier is with the PIU/senior Engineer of the PIU in charge of the work. The Contractor shall establish Quality Control laboratories and get the contractually stipulated tests conducted. The test results shall be recorded in the prescribed Quality Control Registers. Engineers of the PIU shall witness the carrying out of a percentage of tests as described in Para 3. All the concerned officers shall record their observations in the Quality Control Registers.
- (ii) The second tier comprises of periodic inspection by the State Quality Control Coordinator (SQC) and his staff engaged by the Nodal Agency, independent of the PIUs
- (iii) The third tier comprises of National Quality Monitors (NQMs) appointed by the NRRDA for the purpose, who shall be retired Senior Engineers from State/Central organizations. These NQMs will carry out Quality testing of PMGSY works on random sampling basis from the prioritizing list, mainly in order to confirm that the programme implementation and State Quality Control System is working satisfactorily. The NQMs are expected to make constructive suggestions relating to procedural aspects in addition to locating problems at individual work level. The SQC will be responsible for reporting compliance on the issues raised by NQMs and observations of NRRDA in this regard.

5.2.1 Assessment of the General Level of Satisfaction on the Quality of Rural Roads

Rural Roads component of Bharat Nirman seeks to join all the unconnected rural habitations with a network of all-weather roads. The primary aim for an infrastructure augmentation of this scale is to create a multiplier effect that this connectivity can produce. The section starts with a quality assessment as reported by the beneficiaries in all the states. This will

be linked with the institutional Quality Control (QC) mechanism in place later on in this chapter.

As shown in Table 5.1, the reported satisfaction levels of most of the beneficiaries' vis-à-vis the conditions of the roads have been mostly positive (91.5 %). Of these, people from Bihar (34.4%) and Assam (16%) have reported dissatisfaction most of all. A detailed analysis of the reasons for dissatisfaction of the beneficiaries yields a clearer picture. 33% of people in the sample from Bihar and 9% from Assam have declared that sub-standard material has been used in the construction of roads in their area. Further, in the flood-prone Bihar and Assam, 10% people surveyed had reported that there was no drainage system for the roads.

Table-5.1: Level of Satisfaction (Beneficiary Level Table)

State	Total No. of Sample Beneficiaries	Satisfied	Dissatisfied	NA	%Satisfied	%Dissatisfied	Poor Quality Material used in Construction of Road	No Drainage System
Assam	200	168	32	0	84	16	9	10
Bihar	180	116	62	1	64.44	34.44	33	10
Gujarat	200	187	13	0	93.5	6.5	3	0
Himachal Pradesh	200	194	6	0	97	3	0	0
Kerala	200	198	0	2	99	0	0	0
Orissa	200	200	0	0	100	0	0	0
Rajasthan	200	200	0	0	100	0	0	0
Grand Total	1380	1263	113	3	91.52	8.19	45	20

The picture remains largely the same over the habitation level. 61% percent of the habitations selected in the sample for Bihar reported dissatisfaction with the condition of roads constructed. On an average almost 80% of the habitations studied reported satisfaction over the condition of the roads. The predominant view emanating at the habitation level is that the roads are in a 'very good' condition (about 62%), while almost one-fourth (26%) have given the roads an 'average' score. An almost negligible proportion of the habitations (less than 1%) have reported that the roads were in bad condition.

Table-5.2: Level of Satisfaction (Habitation Level Table)

State	No of Habitations Selected for the Study	Condition of Road				User Satisfied with the Road Condition	User not Satisfied with the Road Condition
		Excellent	Very Good	Average	Bad		
Assam	20	2	10	6	0	16	3
Bihar	18	0	9	9	0	7	11
Gujarat	20	4	13	3	0	19	1
Himachal Pradesh	20	0	7	13	0	18	2
Kerala	20	2	15	2	1	19	1
Orissa	20	0	16	4	0	11	9
Rajasthan	20	4	16	0	0	20	0
Grand Total	138	12	86	37	1	110	27
		[08.70%]	[62.32%]	[26.81%]	[00.72%]	[79.71%]	[19.57%]

A detailed look at the reported reasons for dissatisfaction at the habitation levels reveals that most of the grievances relate to the repair and maintenance of the roads (12.3%).

Table-5.3: Reasons for Dissatisfaction (Habitation Level Table)

State	Reason for Dissatisfaction:						
	No Drainage/ Culvert	Used Substandard Material, Stones, Bricks. No Proper Black Tapping	Water Logging	Quality of Road is Bad and Road is not Repaired/ Maintained	Width of Road is not as per Requirement	Incomplete Road	Others
Assam	0	2	0	1	0	0	0
Bihar	1	2	0	8	0	0	0
Gujarat	0	0	0	1	1	0	0
Himachal Pradesh	0	0	0	0	1	0	2
Kerala	0	0	0	1	0	0	0
Orissa	5	4	3	6	0	0	0
Rajasthan	0	0	0	0	0	0	0
Grand Total	6	8	3	17	2	0	2
	[04.35%]	[05.80%]	[02.17%]	[12.32%]	[01.45%]	[00.00%]	[01.45%]

Almost 6% percent of the habitations report use of sub-standard materials as their reason of dissatisfaction while about 4% report that there is lack of drainage/culverts. 44% of the 18 habitations selected in Bihar have cited poor quality of the road and no 'maintenance / repair' as the reason. The same reason is cited as causes of dissatisfaction in 6 out of the 20 habitations studied in Orissa.

To sum up this section, there seems to be three main reasons for dissatisfaction cited by users in most of the states, namely, maintenance/repair, use of sub-standard material and poor drainage facility.

5.3 Quality Control Tests

As detailed in the first section of the chapter, there is a 3-tier mechanism in place as checks on the quality of the roads constructed. Requirements regarding quality control tests to be carried out are detailed under the first-tier. This section will summarize the findings of the evaluation study on the efficacy of the quality control tests done at the state, district, block and road levels.

As can be seen from table below, under the first tier quality control mechanism (in house), mandatory control tests were carried out by the contractors and supervisory officers of the executing agency inspecting the work site in all the sample states. But, the numbers of test/inspections were not consolidated at the state level in Gujarat and Himachal Pradesh. In Gujarat, all tests were carried out in mobile labs. Details for every road are not consolidated at the state level. Hence, the extent of adherence to standards was not mentioned. In Himachal Pradesh, quality control registers were being maintained by the PIUs for each project separately. Such registers were checked by the visiting NQM/SQM but due to the problem of cataloguing such records for tests are not reported by all the PIUs/Districts. In Orissa tests were carried out as per Govt. of India guidelines. The 1st tier quality control was to be an in-house mechanism, and was fully supervised at the grass root level. Further, as their visits to the site were very frequent, they had not maintained particulars of records of inspection.

Few Empirical Occurrences of violation of Quality Control have been given in Box V.

(Box V)

Quality Control of Roads

It was found that in many projects prescribed norms were not followed like NH 35 to Japraogaon road, Barbarua Block in Dibrugh Quality of road was poor black topping was not done. 3rd stone (Gutka) was not been placed. Thickness was not adequate. Drainages had not been done.

In Bhagalpur Bihar Bhaglpur block kahalgaon had power plant and all heavy vehicles were transported by it the bituminous layers thickness was less for carrying heavy vehicles along with the lack of awareness among local people led to cutting of roads by pipes and wastes of animals. It affected the bituminous layer and the longevity adversely.

Upgradation project NH 31-to Saree to Noaawan Path, Asthawan in Nalanda, Bihar

- The contractor had the plant and equipment of standard quality but he did not used good quality material in construction to cut cost.
- Prescribed thickness was not maintained.
- Quality of material was compromised.
- Local labours were not employed as they charged higher.
- As work was dragged for long water got collected on the road and there are pits which needed refilling before carpeting.

Karapadam to Ponnambiyoli, Chalakudi in Trissur, Kerala.-

- Road was damaged within a year of its completion and some of the places there were half to one feet pit and pot holes.
- Black topping was completely eroded due to the less recommended thickness (30mm) of the road. They agreed to chances of corruption.

Dibrual Dehingio Gaon, Assam

- It was felt that heavily loaded trucks are plying on the road which was used for nearby railway construction will damage the road.

Romai –Saolikota, Lahwal, Dibrugarh Assam black topping should be increased by 30 mm to protect road from rain

Barahat to Vishanpur and Kanjha Ghutiyant to Chandika Asthan, Khalgaon, Bhagalpur, Bihar

- Quality of road was bad and deteriorated further as heavy vehicles ply on them. The thickness of road should be increased to protect it.

Table-5.4: Status and Effectiveness of the prescribed First Tier Quality Control Mechanism

State	2005-06						2006-07					
	Whether Contractors carried out Mandatory Control Tests under supervision of District PIU	Details for every road not consoli-dated at State Level	Supervisory Officers of Executing Agency carried out Inspections	Records are not maintained at State Level about Inspections carried out	Extent of Quality adherence to Standard		Whether Contractors carried out Mandatory Control Tests under supervision of District PIU	Details for every road not consoli-dated at State Level	Supervisory Officers of Executing Agency carried out Inspections	Records are not maintained at State Level about Inspections carried out	Extent of Quality adherence to Standard	
					Good	Satisfactory					Good	Satisfactory
Assam	Y	0	Y	0	0	Y	Y	0	Y	0	0	Y
Bihar	Y	0	Y	0	0	Y	Y	0	Y	0	0	Y
Gujarat	Y	Y	Y	Y	0	0	Y	0	Y	Y	0	0
Himachal Pradesh	Y	Y	Y	Y	0	0	Y	0	Y	Y	0	0
Kerala	Y	0	Y	0	Y	0	Y	0	Y	0	Y	0
Orissa	Y	0	Y	0	0	Y	Y	0	Y	0	Y	0
Rajasthan	Y	0	Y	0	Y	0	Y	0	Y	0	Y	0
Grand Total	7	2	7	2	2	3	7	0	7	2	3	2

Table 5.5 depicts that out of total 138 roads, 124 roads are all weather roads, the quality of 116 (94%) roads are found to be good and 5 roads (2 HP, 2 Kerala and 1 in Orissa) are average, while work on 3 roads in Dibrugarh district of Assam are under progress. Mention should be made that in five sample districts, i.e., Nowgaon of Assam, Bhagalpur of Bihar, Thiruvananthapuram & Thrissur of Kerala and Ajmer of Rajasthan, there is no expenditure on repairing work as quality of all selected 50 roads are observed to be good (except 2 roads in Kerala where condition of the roads is poor).

Box VI

Ghugas-khuta-kangra Mahadev Falia Road, Fatepura, Dahod, Gujarat, Reported that quality of road was good as it withstood 18 inches of rain.

Table-5.5: Quality and Expenditure on Maintenance of All Weather Roads constructed under the programme

State	No. of Districts selected	No. of roads selected for the study	No. of all weather roads	No. of roads those Work under progress	Quality of all weather roads constructed under the scheme			Expenditure on maintenance of all weather roads	Out of selected all weather roads no. of roads repaired and their Quality		
					Good	Ave-rage	Poor		Good	Average	Poor
Assam	Dibrugarh	10	10	0	7	0	0	2,749,000	3	1	0
	Nowgaon	10	10	0	10	0	0	0	0	0	0
Bihar	Bhagalpur	10	10	0	10	0	0	0	0	0	0
	Nalanda	8	8	0	8	0	0	95,000	1	1	0
Gujarat	Dahod	10	10	0	10	0	0	85,150	9	0	0
	Surat	10	10	0	10	0	0	73,500	2	5	0
Himachal Pradesh	Kangra	10	4	6	2	2	0	713,392	2	0	0
	Shimla	10	2	8	2	0	0	2,257,481	1	1	0
Kerala	Thiruvananthapuram	10	10	0	10	0	0	0	0	0	0
	Thrissur	10	10	0	8	1	1	0	0	0	0
Orissa	Bolangir	10	10	0	10	0	0	125,400	3	0	0
	Dhenkanal	10	10	0	9	1	0	127,942	1	1	0
Rajasthan	Ajmer	10	10	0	10	0	0	0	0	0	0
	Barmer	10	10	0	10	0	0	230,000	1	1	0
Total	-	138	124	14	116	4	1	6,456,865	23	10	0

It is observed that 57% of the roads constructed in Assam had mud surface and red stone; hence, bituminization of the surface is required for durability of roads and for preventing water logging. Instances of expenditure

on repairing also confirm the bad condition of newly constructed roads in the state.

In Bhagalpur district of Bihar all selected roads are new. The quality of two roads in Nalanda district is good to average but money has been spent on repairing.

Table-5.7: Quality and Quantity of Materials Utilized by the Contractor in Road Construction under the Bharat Nirman Programme as reported by Local users

State	No. of Habitations Selected for the Study	Utilised Tested and Quality Materials	Not utilised Tested and Quality Materials	Quality and Quantity of Materials used by the Contractor		
				Not up the Standard/lack of Thickness	Used Inadequate Quantity of Black Tapping	Used substandard Quality Cement/ Bricks instead of Stones
1	2	3	4	5	6	7
Assam	20	12	4	4	2	0
Bihar	18	10	8	7	0	1
Gujarat	20	12	5	2	0	1
Himachal Pradesh	20	19	1	0	0	0
Kerala	20	18	0	0	0	0
Orissa	20	15	0	0	0	0
Rajasthan	20	20	0	0	0	0
Total	138 (100%)	106 (77%)	18 (13%)	13 (9%)	2 (0.01%)	2 (0.01%)

Opinions of local users (Habitations) have also been obtained in the structured schedules regarding quality and quantity of materials used in construction of rural roads. It is observed in Table 5.7 that as per 77% local users, contractors used tested and standard quality material, but 13 % users in states like Assam, Bihar and Gujarat reported that quality and quantity of materials used by the contractor were not up to the mark; there was a lack of bituminous thickness; inadequate quantity of black tapping was used and substandard quality of Cement, bricks was used instead of stones, while 10% of local users (4 from Assam, 3 from Gujarat, 2 from Kerala and 5 from Orissa) did not respond at all.

5.4 Supervision/Inspection of Supervisory Officers of Executive Agency

Maintaining the quality of work is the most important feature of this program. It was the prime responsibility of the PIUs to make certain that the work done and all the materials utilized in the same conformed to the prescribed specifications.

Table-5.8: Status and Effectiveness of the Prescribed Second Tier Quality Control Mechanism during the period 2005-06 to 2006-07 under Bharat Nirman

State	No. of Inspections conducted by State Level Monitors (SQM) Independent of executive Agency deployed under Bharat Nirman Programme as reported by:								
	State Level Authorities		Quality Observed in Both Years by State Level Monitors			District Level Authorities		Block Level Authorities	
	2005-06	2006-07	Good	Satisfactory	Work is going on as per the Specifications	2005-06	2006-07	2005-06	2006-07
Assam	551	513	-	-	1	86	2	23	3
Bihar	164	189	-	1	-	12	15	0	0
Gujarat	345	229	-	1	-	79	45	31	16
Himachal Pradesh	249	163	1	-	-	34	36	7	10
Kerala	57	42	-	1	-	1	1	0	0
Orissa	2411	2392	-	1	-	24	36	14	31
Rajasthan	2466	6631	1	-	-	359	1216	111	151
Total	6243	10159	-	-	-	595	1351	186	211

From Table 5.8 it is found that, overall, 10159 periodic inspections of works were carried out in the selected states by the State Level Monitors (independent of executive agency deployed), i.e., State Quality Monitor (SQM) cells. Progressively increasing numbers of inspections were carried out at the state, district and block levels as can be seen in the figures in 2006-07 over those in 2005-06. This increase is 3916 at the state level, 756 in selected districts and 25 in selected blocks. The state-wise inspections exceed from the previous year only in Rajasthan and Bihar where quality of work also observed good or

(Box VII)
Quality reports by NQM

- Out of 10 roads selected for evaluation in Kangra District of Himachal Pradesh, the team was not able to locate any test lab on the work site as all the roads visited by the team were completed works. However, an attempt was made to visit sites of some ongoing works. It was found that the contractors have set up such labs in their store rooms at work sites. All these labs lacked the basic equipments, however, some equipment were there to conduct some tests most of which were unused. It is observed that these labs were set up just to complete the formality as required under the guidelines.
- NQM had visited 18 sites in 2005-06 and 15 sites in 2006-07. They pointed out shortcoming in almost all the inspection reports.
- In Dharmshala, it was the NQM team observed that the equipments installed in the labs were purchased but never used. Some of the contractors revealed that the testing in Dharmshala is nothing but another source of corruption for the HPPWD. No contractor was conducting mandatory tests and even the high tech lab in Dharmshala was of no use.

satisfactory respectively. In Assam, work is going on as per the specification and other states required improvement in quality, as reported by state authorities. In 71% sample states, number of inspections declined in 2006-07 from previous year. It was also noted that in most of the selected districts, tests performed by the SQMs were found to be as per the guidelines barring only a few cases like Dahod Block/ Limkheda/ Fatepur in Gujarat and Shimla Block/ Chhauhara in Himachal Pradesh. Frequency of inspections declined from the previous year in 71.4 states.

As per Table 5.9, periodic inspections carried out by the national level independent monitors, i.e., National Quality Monitors (NQM) in the selected states are in 2006-07 (1952) is 710 less than the previous year as reported by the state authorities. In Assam and Rajasthan quality observed was good, satisfactory in Bihar, Himachal Pradesh, Kerala and Orissa, while poor quality of roads was observed in Gujarat. Similarly, in the selected districts and blocks, inspections of national level independent monitors (NQM) were less in numbers compared to the previous year as in most cases work was in progress. **Focus group discussions threw light on NQM report of Himachal Pradesh, as given briefly in box VII.**

Table-5.9: Status and Effectiveness of the Prescribed Third Tier Quality Control Mechanism during the period 2005-06 to 2006-07 under Bharat Nirman

State	National Level Independent Monitors(NQM) Carried out Quality Inspection in Selected States under Bharat Nirman Programme as reported by:								
	State Level Authorities		Quality observed in both years by National Quality Monitor(NQM)			District Level Authorities		Block Level Authorities	
	2005-06	2006-07	Good	Satisfactory	Poor	2005-06	2006-07	2005-06	2006-07
Assam	250	327	2	0	0	32	14	8	5
Bihar	400	167	0	2	0	24	42	0	0
Gujarat	260	132	0	0	2	41	26	11	14
Himachal Pradesh	560	96	0	2	0	31	34	10	6
Kerala	132	112	0	2	0	1	2	0	0
Orissa	408	488	0	2	0	18	21	10	11
Rajasthan	652	630	2	0	0	24	29	8	11

In view of the decreased numbers of periodic inspections during the year of 2006-07 at the state, district and block levels by the National-level Independent Monitors, the Ministry of Rural Development should lay down a scheme of incentives/disincentives to the States/Districts so that they observe norms regarding such inspections, quality standards and timely completion of works. It is observed that in Kerala work was completed during the year 2004-05 and no new work was under taken during 2005-06 to 2006-07 in the sample blocks.

Some Instances of roads that are not all-weather roads according to the beneficiaries can be noted in Box-VIII

(BOX –VIII)

Serving as All weather roads

On usability of road, Focus group discussions threw light on certain roads. In Himachal Pradesh the road remained non- functional for 2-3 days after every torrential rain and was not motorable as got slippery. Another road, from Jhatwari to Gwas, Chhauhra in Shimla district did not remain transportation worthy during 2-3 months of the rainy season /snowfall.

5.5 Monitoring

The Ministry of Rural Development evolves suitable software for an “Online Management & Monitoring System (OMMS)”. The state authorities are equipping the PIUs with the necessary computer hardware to enable on-line monitoring. It is observed that although OMMS is in operation, it is not utilized properly as can be seen in tables of chapter – III (target and achievement).

It is observed that in Assam OMMS is used for preparation of DLRRP. In Himachal Pradesh the IT Nodal officer at the Head Office monitors and updates the OMMS data status. In Gujarat data management is poor in the district due to lack of complete computerization at the block level.

The Ministry of Rural Development, in co-operation with the Nodal Department for the Programme at the State Level, organizes suitable Training Programmes for the PIU personnel. Table 5.10 presents that out of the 14 sample districts, only 10 districts constituted Vigilance/Monitoring Committees and all of these held 48 meetings where resolutions were passed for solving land disputes and directions were laid down for early completion of work. It is observed that three districts, i.e., Surat of Gujarat, Shimla of Himachal Pradesh and Ajmer of Rajasthan did not constitute Monitoring/Vigilance Committees; while for Bhagalpur of Bihar, information is not available. In Kerala, district level Vigilance/Monitoring Committees were formed but the details of composition is not available with the district authorities. So, for other states, i.e., Assam, Bihar, Gujarat, Himachal Pradesh, Orissa and Rajasthan, composition of the district level Vigilance/Monitoring Committee is presented in **diagram 5.1**. It is observed that in Assam, District Development Committees and District review committee exists and review is done every month by the Chief Engineer. In Bihar, prior to 2004, the committee was under the DM, DDC and S.P. of the district and there after the Zila Satarkta Committee is headed by an MP/DM. It is observed that effectiveness of these committees are moderate during the Bharat Nirman Programme period as physical performance of habitation and length of targeted roads covered proved to be less than the targets.

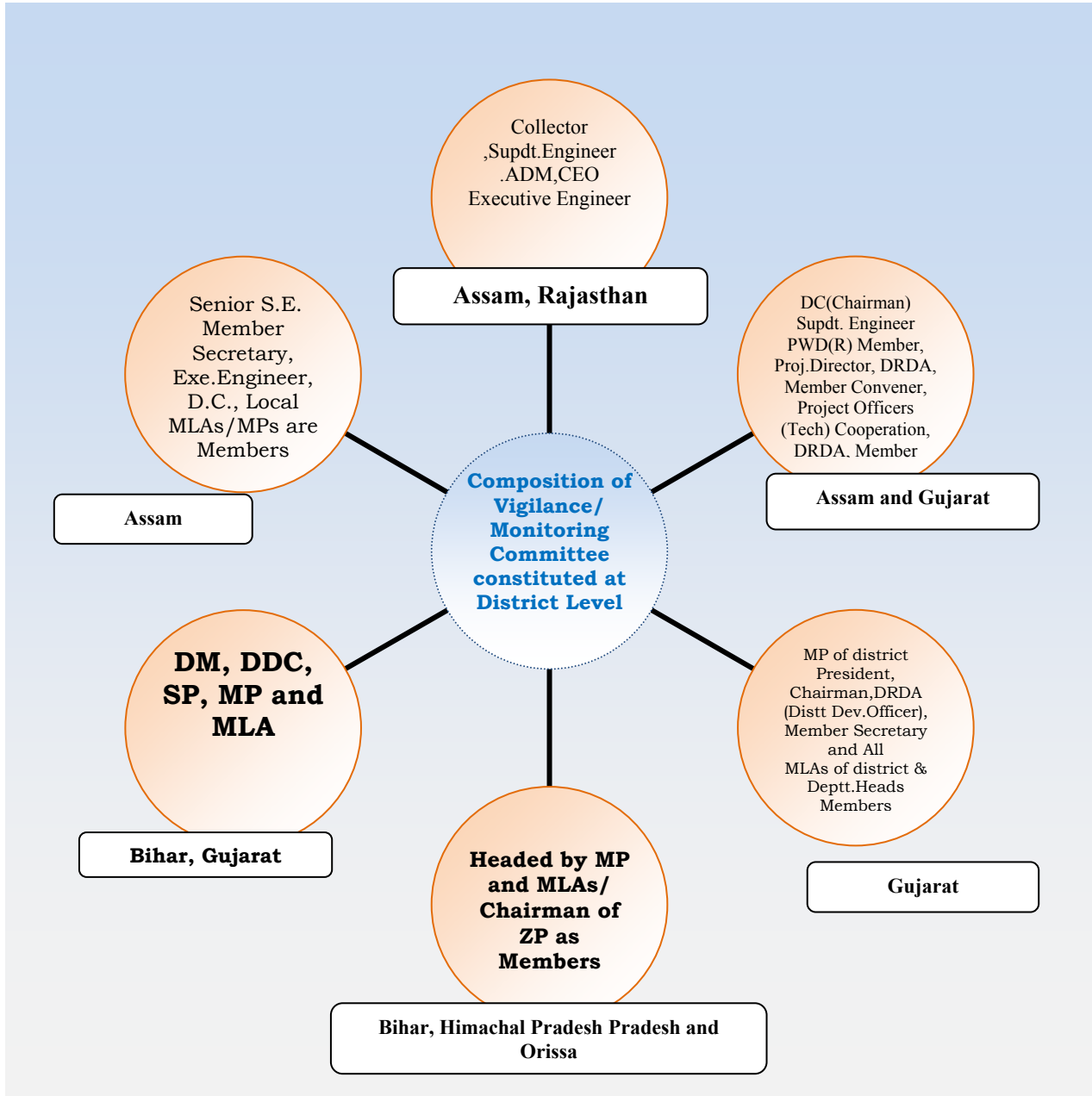
Table-5.10: Vigilance/ Monitoring Committee Constituted at District Level

State	No. of Districts Selected for the Study	District Vigilance/ Monitoring Committee Constituted	No. of meetings held	PIU Provided Training to:	
				Assistant Engineer & Jr. Engineer	Contractors and Workmen Engaged in Rural Road
Assam	2	2	5	2	2
Bihar	2	1	0	2	2
Gujarat	2	1	8	2	2
Himachal Pradesh	2	1	2	2	1
Kerala	2	2	10	2	2
Orissa	2	2	16	2	2
Rajasthan	2	1	7	2	2

- * Note:-1) In Kerala, details of composition of monitoring committee information is not available.
- 2) Regarding Constituted monitoring committee in 1 district of Bihar information is not available.

It is reflected in Table 5.10 that PIUs of all the 14 selected districts provided training to Assistant Engineers/Junior Engineers. Barring Shimla of Himachal Pradesh, other states conducted training programmes for the contractors and personnel (Work Inspectors, Surveyors, etc.) engaged in Rural Road construction under Bharat Nirman as reported by the concerned district authorities. It is observed that meetings of monitoring committees were irregular. In Bihar, no meeting was held by the Monitoring Committee. ***There is an urgent need to constitute this Committee at state, district and block level to bring more transparency and quick implementation of the work.***

Diagram- 5.1: Composition of Vigilance/Monitoring Committee constituted at District Level



In Table 5.11 it can be seen that out of 27 selected blocks, only in three blocks, i.e., two in Bihar and one in Gujarat, Monitoring Committees were formed at the block level for the monitoring of rural road work.

Table-5.11: Monitoring Committee Constituted at Block Level for Rural Road under Bharat Nirman during the period 2005-06 to 2006-07

Sl. No	State	No. of Blocks Selected for the Study	No of Blocks where Vigilance/ Monitoring Committee for Rural Roads Constituted
1	2	3	4
1	Assam	4	0
2	Bihar	3	2
3	Gujarat	4	1
4	Himachal Pradesh	4	0
5	Kerala	4	0
6	Orissa	4	0
7	Rajasthan	4	0
Total		27	3(11.11)

The Ministry of Rural Development brings out periodical reports and returns for monitoring the performance and progress of projects taken up under this programme. In Orissa, Dhenkanal district submitted fund utilization certificate of the projects to the OSRRDA in time. Similarly in Dahod district of Gujarat DPIU submitted fund utilization certificate to Gujarat State Rural Road Development Agency (GSRRDA) in time.

Table-5.12: Submission of Utilisation Certificates to the Ministry (NRRDA)/SRRDA under Bharat Nirman Programme as reported by District authorities

Sl. No.	State	Total no. of Districts Selected	No. of Districts Submitting Utilization Certificate to the:		No. of PIUs Submitting Utilization Certificate to the:	
			Ministry	SRRDA	Ministry (NRRDA)	SRRDA
1	2	3	4	5	6	7
1	Assam	2	2	-	2	-
2	Bihar	2	2	-	2	-
3	Gujarat	2	2	-	1	1
4	H.P.	2	2	-	2	-
5	Kerala	2	2	-	2	-
6	Orissa	2	1	1	1	1
7	Rajasthan	2	2	-	2	-
Total		14	13	1	12	2

5.6 Main findings of the Chapter¹

- 1) Though Inspections were made by the SQMs, but they did not visit each and every road constructed under the scheme. It is essential that schedule of visit for SQM and NQMs should be extended to cover every road or at least as much as possible.
- 2) There is an urgent need to constitute Monitoring Committees at the state, district and block levels to bring more transparency, accountability and ensure quick implementation of the work.
- 3) Finally, concerns are remained over contractors' use of substandard materials, stones, bricks, lack of timely repairing/maintenance, lack of attention to drainage/building culverts, and improper black-topping.
- 4) The reported satisfaction levels of most of the beneficiaries' vis-à-vis the conditions of the roads have been mostly positive (91.5 %). However, people from Bihar (34.4%) and Assam (16%) have reported dissatisfaction overall.
- 5) 33% of people in the sample from Bihar and 9% from Assam have declared that sub-standard material has been used in the construction of roads in their area
- 6) The predominant view emanating at the habitation level is that the roads are in a 'very good' condition (about 62%), while almost one-fourth (26%) have given the roads an 'average' score. An almost negligible proportion of the habitations (less than 1%) have reported that the roads were in bad condition.
- 7) Most of the grievances relate to the repair and maintenance of the roads (12.3%).
- 8) Almost 6% percent of the habitations report use of sub-standard materials as their reason of dissatisfaction while about 4% report that there is lack of drainage/culverts.
- 9) Out of 124 roads the quality of 116 (94%) roads are found to be good and 5 roads (2 H.P., 2 Kerala and 1 in Orissa) are average, while work on 3 roads in Dibrugrdh district of Assam are under progress

1 Earlier a Quick Concurrent Evaluation of PMGSY commissioned by PEO in 2005 had reported that the quality of roads constructed under PMGSY was mostly good apart from a single instance from Rajasthan. Two facts were highlighted by the Study vis-à-vis the quality of the roads:

1. the 'need for maintenance' of the roads as they were 'damaged' and were in 'urgent need of repair';
2. Some of the roads listed as under 'new connectivity' were actually 'old roads'.

-
- 10) As per 77% local users, contractors used tested and standard quality material, but 13 % users in states like Assam, Bihar and Gujarat reported that quality and quantity of materials used by the contractor were not up to the mark.
 - 11) In 71% sample states number of inspections declined in 2006-07 from previous year.
 - 12) PIUs of all the 14 selected districts provided training to Assistant Engineers/Junior Engineers. Barring Shimla of Himachal Pradesh, other states conducted training programmes for the contractors and personnel (Work Inspectors, Surveyors, etc.) engaged in Rural Road construction under Bharat Nirman as reported by the concerned district authorities.
 - 13) Out of 27 selected blocks, only in three blocks, i.e., two in Bihar and one in Gujarat, Monitoring Committees were formed at the block level for the monitoring of rural road works

Chapter 6

Flow of Funds, Procedure for allocation and Release

6.1 Introduction

This chapter deals with the flow of funds and the procedure for allocation and release of funds for the Rural Roads component of Bharat Nirman (i.e., from 2006-07 to 2007-08). Since a major portion of the road-work had started under the 'PMGSY' (*Pradhan Mantri Gram Sadak Yojana*), the chapter also looks at the flow of funds data during the period of 2000-01 to 2005-06. This is to ensure that there is continuity from PMGSY to Bharat Nirman. Along with the details of procedures of allocation, release and expenditure of funds (in short, flow of funds), the important aspects of timely availability and adequacy of the funds at all the levels (State, District, Block and Road) are looked into. Yearly data for the aforesaid periods have been taken on total expenditure, allocation and release of funds at state, district, block and road levels.

It is a 100% centrally-funded program but the responsibility of implementation lay with the state. PMGSY Funds are made available on a yearly basis to 28 states which excluded the administrative cost and the maintenance cost. It is the responsibility of the State government to bear all administrative costs. This includes the cost of maintenance of the roads for five years from the date of completion of project. Moreover, any extra expense incurred due to time over-run or costs exceeding the allocation amount, falls on the state.²

6.2 Procedure for Release of Funds

6.2.1 The guidelines of PMGSY were carried over to Bharat Nirman *in toto*.

- ❖ A tripartite Memorandum of Understanding was to be entered into between the Bank, State-level Agency and the Ministry of Rural Development.
- ❖ A nodal department was nominated to interact between ministry of rural development and state government

² Arrangements of funds under Bharat Nirman has been made through three main sources

- Cess on high speed diesel oil.
- ADB/World bank
- NABARD window

-
- ❖ At the state level, one/two agencies which already existed for considerable years of time were selected as State Rural Road Development Agency (SRRDA), namely, Public Works Department/ Rural Engineering Service Organisation/Rural Works Department /Zilla Parishad/Panchayati Raj Engineering Department, etc. Further, one district was to be given to the Executive Agency. The Executing Agency was to have a Programme Implementation Unit (PIU) in the District.
 - ❖ From any public sector bank, state level agency was to select a bank branch having internet connectivity which will maintain two accounts for PMGSY/Bharat Nirman funds. It was also entrusted with the responsibility to maintain all transaction data for on line Management and Monitoring System of PMGSY/Bharat Nirman. Funds were not to be transferred to any other branch and the chosen branch (and bank) gave written undertaking that it (they) would adhere to guidelines of Government of India regarding payment of funds. The given fund would exclude administrative expenses and would be concerned with the road work only.
 - ❖ Executive engineer of PIU would be nominated as authorised signatory. The agency would nominate one senior officer (not below the rank of chief engineer) as empowered officer. It would be the duty of the empowered officer to provide a list of authorised signatories and authorised payees. The PMGSY/Bharat Nirman would have a 'Project approach' where road-works were to be completed within 9-12 months from initiation of work in case of plain areas and up to 18 months in case of hilly states from the date of issue of the work order.
 - ❖ The Project proposals were to be based on the district-wise estimates allocated by the nodal department. The Ministry of Finance would then release the funds on the recommendation of NRRDA and the Ministry Of Rural Affairs to the bank accounts maintained by state level autonomous agencies. After the clearance of the project by the Ministry, first level instalments amounting to 25% of the total approved cost would be released. Further instalments would be released as per the conditions fulfilled by the state as per guidelines of Government of India. The release would be subject to submission of documents showing completion of 80% of the road-work of previous year and utilisation of at least 60% of the fund already released to the state.

A Chart of flow of Funds for Bharat Nirman is given below:

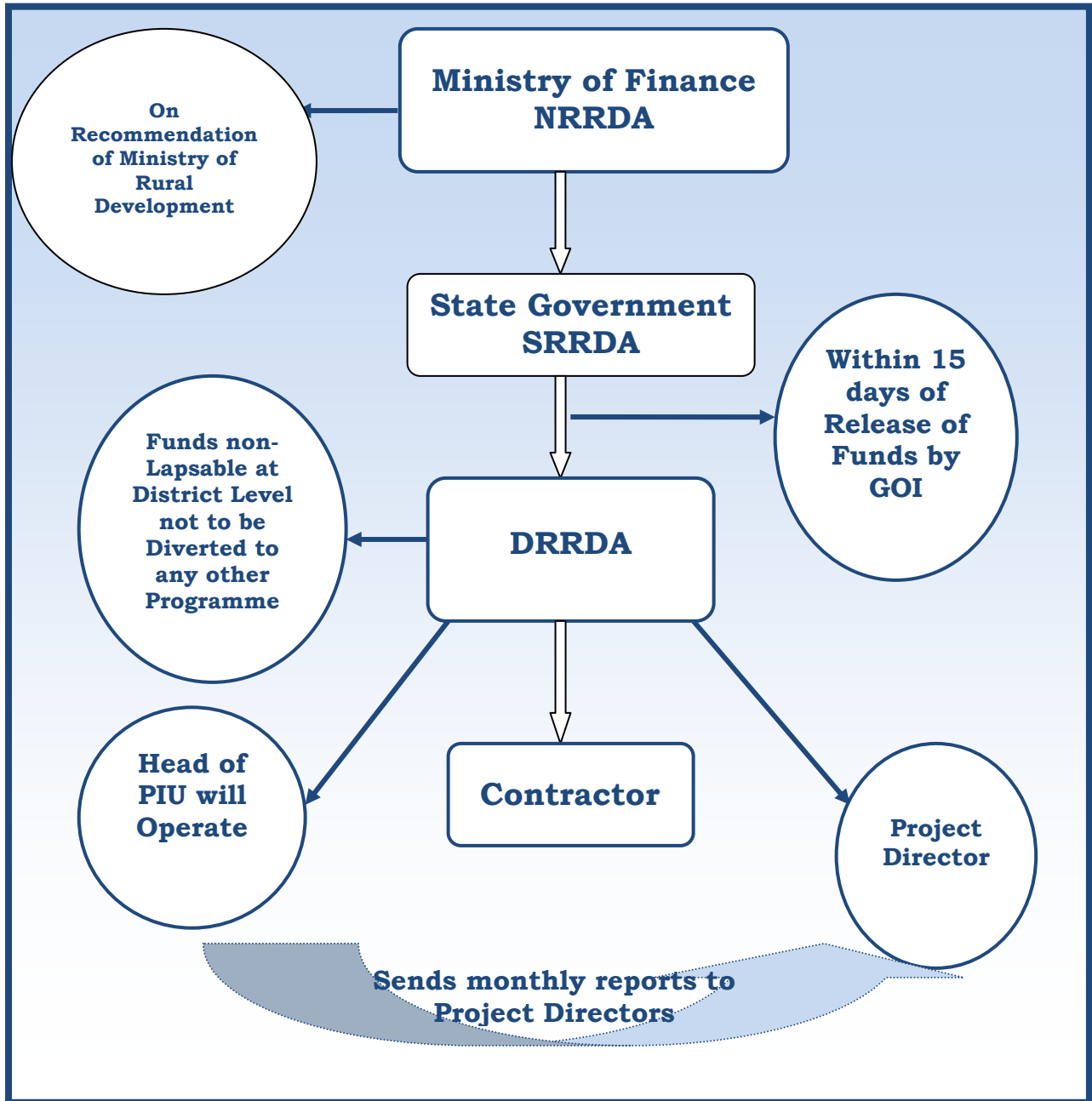


Figure 6.1

6.2.2 Criteria of Allocation of Funds

Of the total corpus of funds, 75% was allocated on the basis of needs and the rest (25%) on the basis of coverage. Preferences were given to those roads which cover more than the targeted habitation. Out of the allocated funds to state, 80% was meant for providing rural connectivity and the rest of the 20% was to be used for up-gradation of roads. The state government was to inform the yearly distribution of district-wise allocation to the Ministry/NRRDA. While allocating funds to districts, the number of habitations to be taken up under the PMGSY or any other programme would be excluded from the count for total number of unconnected habitations (even for the cases where work on the roads were still incomplete).

Apart from this, a particular allocation from the Rural Road share of the diesel Cess would be made for:

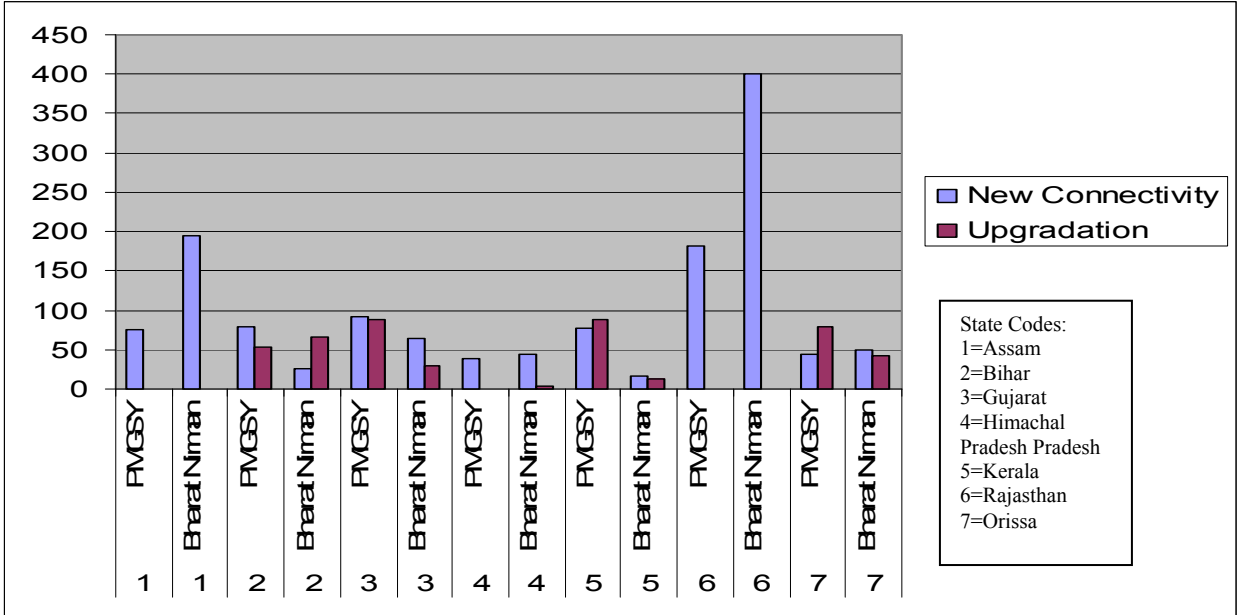
1. 1% for Districts sharing borders with Pakistan and China (in coordination with the Ministry of Home Affairs)
2. 0.5% Districts sharing borders with Myanmar, Bangladesh and Nepal (in coordination with the Ministry of Home Affairs)
3. 1.5% Left wing Extremists areas in the districts identified by the ministry of home affairs.
4. 1% Extremely backward districts (as identified by the Planning Commission) which can be categorised as Special Problem Areas
5. 1% Research and Development projects and innovations.

6.3 Financial Performance at Various Levels

6.3.1 To assess the flow of fund as per guidelines, data on allocation, released and the expenditure of funds made, was collected at three levels viz. state, district and block.

State Level:

Chart-6.1: Utilisation of Funds (as Percentage of fund allocated) at the State-level in the Sample States



A glance at the Chart 6.1 and Table 6.1 reveals that there has been wide variation in the percentage of funds utilised (out of the allocated amounts) among the states. Roads providing new-connectivity in the sample states of Rajasthan (both for PMGSY and Bharat Nirman) and Assam (Bharat Nirman) reported over-utilisation of funds, revealing cost over-runs. After discounting cost over-runs (i.e., Rajasthan), the **over-all utilisation of funds stands at 67.65%**, which **falls to about 66% in the period since Bharat Nirman** was launched. Of the states, Himachal Pradesh, Kerala (during the Bharat Nirman phase) and Orissa have reported below 50% utilisation of funds at the state level.

A look at the pattern of funds utilisation for up gradation of roads at the state level reveals that the sample states of Assam and Rajasthan have not reported any expenditure (nor any allocation) on up gradation of rural roads. Himchal Pradesh (4.1%), Gujarat (during Bharat Nirman, 28.5%) and Kerala (during Bharat Nirman, 13.3%) reported very low utilisation percentages of the allocated money for the purpose. The over-all average utilisation percentage at the state level, during the PMGSY period comes to 77.27% (leaving out the states which did not report expenditure on this head). This figure dips to 30.74% during the Bharat Nirman Period.

Table 6.1: Allocation and Expenditure of Funds at the State-level for the Sample State

(Rs. lakh)

States	Schemes	Allocation New Connectivity	Expenditure New Connectivity	Percentage Utilised	Allocation Up-gradation	Expenditure Up-gradation	Percentage Utilised
Assam	PMGSY	47600	35628	74.8	0	0	0
	Bharat Nirman	35200	68802	195.5	0	0	0
Bihar	PMGSY	45471.04	36004	79.2	1042.82	565	54.2
	Bharat Nirman	39659.82	10499.56	26.5	79146.2	51642.1	65.2
Gujarat	PMGSY	24715	22675.76	91.7	6605	5848.72	88.5
	Bharat Nirman	21984	14154	64.4	12929	3684.46	28.5
Himachal Pradesh	PMGSY	60796.07	22908	37.7	0	0	0
	Bharat Nirman	92701.43	41176	44.4	32037.44	1329.27	4.1
Kerala	PMGSY	14735.35	11422.48	77.5	334.43	294.84	88.2
	Bharat Nirman	3423.76	572.61	16.7	30839.71	4092.97	13.3
Rajasthan##	PMGSY	650	1185.79	182.4	0	0	0
	Bharat Nirman	458	1837.15	401.1	0	0	0
Orissa	PMGSY	1176	528.87	45.0	188.32	147.26	78.2
	Bharat Nirman	1597.742	778.15	48.7	380.669	162.03	42.6

Note: ##: In Rajasthan released amount exceeded the allocated amount through out the study period of PMGSY as the estimates prepared by NAARD were less than the cost given by contractors in the tender. Funds provided to Rajasthan were adequate except in one year, i.e., 2003-04.

6.3.2 District Level

Table 6.2: Average Allocation and Expenditure of Funds at the District-level for the Sample States (State-wise)

(Rs. lakh)

States	Scheme	Allocation New Connectivity	Expenditure New Connectivity	% Utilised	Allocation Upgradation	Expenditure Upgradation	% Utilised
Assam	PMGSY	12146.4	3986.5	32.8	0.0	0.0	0.0
	Bharat Nirman	5960.9	4144.7	69.5	0.0	0.0	0.0
Bihar	PMGSY	459.0	689.0	150.1	7702.5	5542.0	72.0
	Bharat Nirman	351.9	2295.7	652.5	1742.1	2051.0	117.7
Gujarat	PMGSY	5541.0	6712.8	121.1	3537.0	0.0	0.0
	Bharat Nirman	4315.0	4053.8	93.9	0.0	0.0	0.0
Himachal Pradesh	PMGSY	30850.6	11685.5	37.9	5578.9	897.5	16.1
	Bharat Nirman	28059.9	23193.0	82.7	0.0	0.0	0.0
Kerala	PMGSY	740.5	309.6	41.8	776.7	0.0	0.0
	Bharat Nirman	2043.7	943.9	46.2	70.4	67.5	95.8
Rajasthan	PMGSY	38444.9	23426.3	60.9	171.4	368.9	215.2
	Bharat Nirman	17533.8	15520.8	88.5	611.7	544.3	89.0
Orissa	PMGSY	9304.4	8846.8	95.1	2187.3	1058.0	48.4
	Bharat Nirman	7723.3	5978.2	77.4	966.6	906.6	93.8

A look at the average utilization figures at the district level (Table-6.2) also shows widespread differences in the percentage of utilization of funds allocated. The percentage figures for new connectivity vary from a low in Assam (32.8%) to Bihar (150%), and overall the figures show improvement in the subsequent period of Bharat Nirman. Over-utilisation figures indicating cost over-runs can be seen in the case of Bihar for both Bharat Nirman and PMGSY and this trend holds for utilization figures for upgradation of roads also. In Himachal Pradesh and Assam, the sample districts did not show any expenditure on upgradation of roads.

6.3.3 Financial Performance at Block Level

In the studied blocks of Bihar and Gujarat it was notified that no allocation was made and no work was taken up. The most important thing coming from the block level data for average utilisation of funds is that, in the sample blocks, on an average the utilisation figures for new connectivity decreased from 67 % during the PMGSY period to 48% during the Bharat Nirman Period, whereas the figures for utilisation of funds for upgradation of roads improved marginally during the Bharat Nirman period.

Table 6.3: Average Allocation and Expenditure of Funds at the Block-level (State-wise)

States	Scheme	Average % Utilisation New Connectivity	Average % Utilisation Upgradation
ASSAM	BHARAT NIRMAN	53.81	.00
	PMGSY	93.26	.00
GUJARAT	BHARAT NIRMAN	.00	.00
	PMGSY	.00	.00
HIMACHAL PRADESH	BHARAT NIRMAN	65.65	12.95
	PMGSY	81.83	.00
KERALA	BHARAT NIRMAN	4.94	.00
	PMGSY	57.39	19.46
ORISSA	BHARAT NIRMAN	73.05	43.72
	PMGSY	88.54	16.41
RAJASTHAN	BHARAT NIRMAN	92.99	.00
	PMGSY	83.32	13.33
Total	BHARAT NIRMAN	48.41	9.45
	PMGSY	67.40	8.20

6.4 Availability and Adequacy and Timelines of Funds

One of the important aims of the evaluation study is to assess whether the funds for the framed project were available as per the requirement, plan and the guidelines. From each seven sample states twenty road projects had been taken. As per the data three states Gujarat, Orissa and Rajasthan reported 100% availability of funds in time for the aforesaid project as per planned by GOI. In case of Assam, Himachal Pradesh and Kerala funds were available only for 19 projects. Kerala reported that funds for the 19 out of twenty sample projects funds were adequate and received in time. In Assam, ample funds were there for 19 projects and 18 projects received them as per the schedule, i.e., 95% adequacy and 90% fund reached on time. Himachal Pradesh received funds in time but that fulfils the requirement of 16 projects only. Whereas in Bihar performance was quiet less then desired. From twenty, only 18 projects (two sample roads were not available) can be studied and funds were on hand for only 16 of them. This fund was neither sufficient for the projects in hand. Only 8 projects could be completed out of the 18 taken for the study. Funds fall short by 33.33%. It was observed that three states Bihar, Himachal Pradesh and Orissa accounted for the inadequacy of the funds. In case of 97.10% projects, there was ample funds as per the costs.

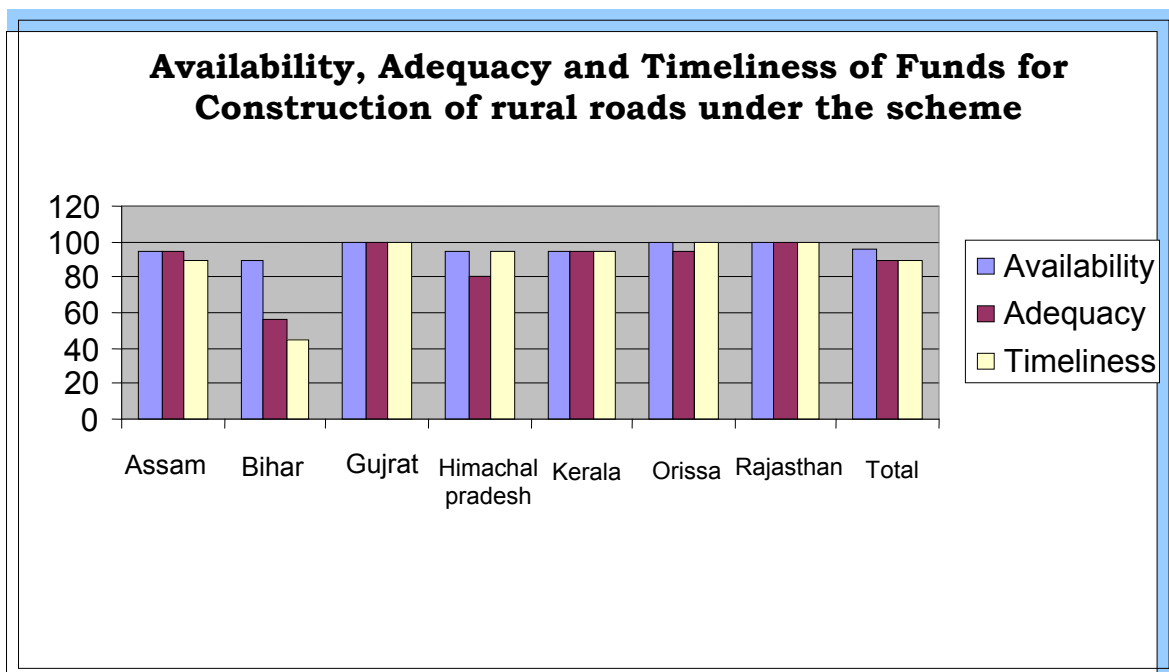


Chart-6.2

Cumulative information speaks that 96.38 % of roads got funds as per plans, i.e., 133 projects out of 138. Funds were available to all the sample projects as per plan. For around 89% of the projects it was timely and adequate. Three out of seven states reported inadequacy of funds ranging from 33.33% in Bihar and 5% in Rajasthan.

6.4 Reasons for Non-availability, Inadequacy and not Receiving of Funds in Time

Table 6.4 explains the various reasons for non-complying of funds with timeliness, adequacy and availability as found out through the survey questionnaires administered to the contractors at the road level. No complaints regarding availability of funds were noticed by all the projects but their adequacy was an issue in Bihar, Himachal Pradesh and Orissa. Two of Bihar projects held due to 'escalating prices', while a project in Himachal Pradesh felt budget estimate was less and in Orissa, one of the project contractor felt that funds were inadequate for the purpose. Bihar projects only reported the delay in receiving fund.

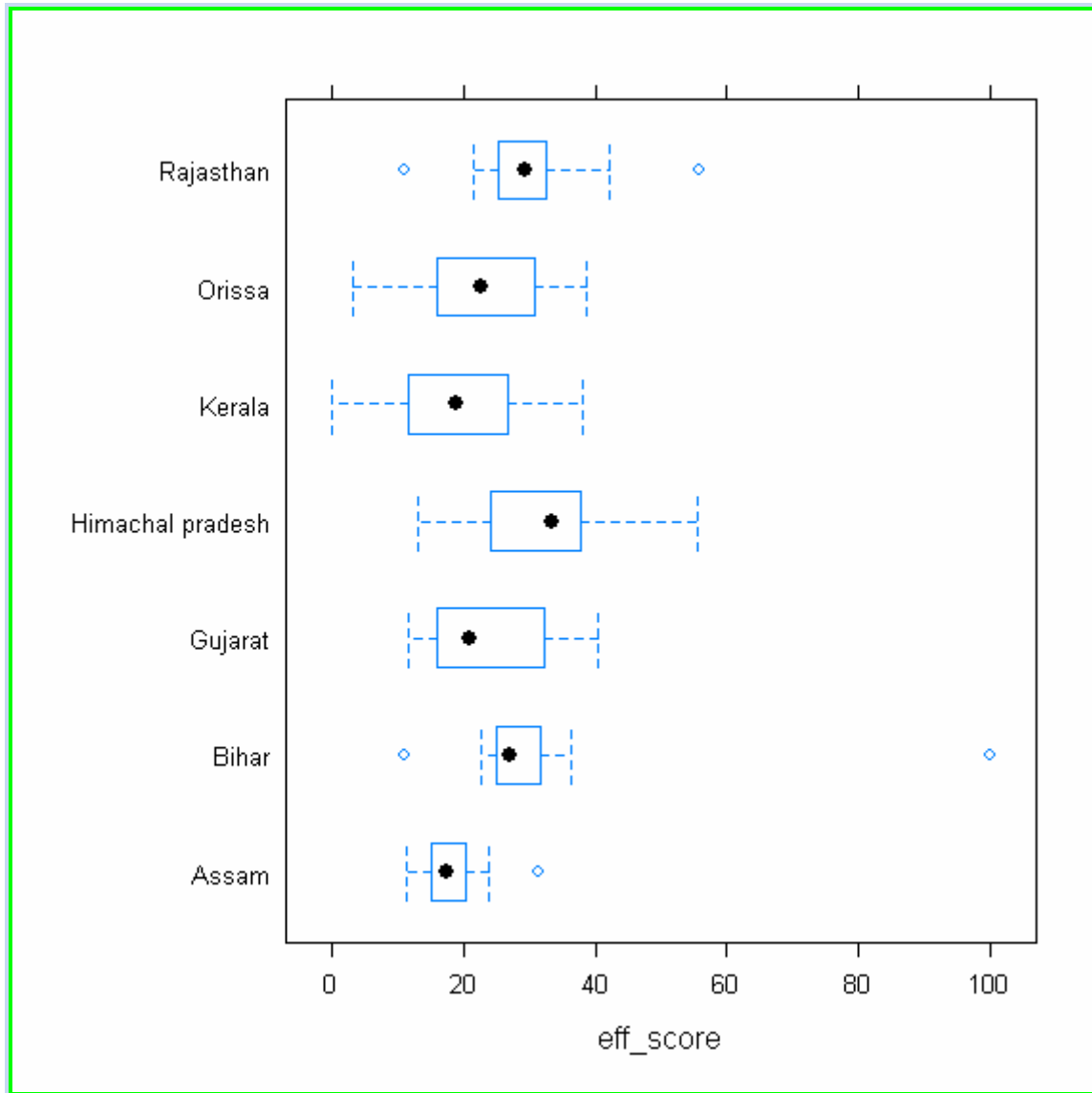
Table-6.4:- Reasons for Non-availability, Inadequacy and not receiving of Funds in time as per plan

State	No. of Roads selected for the study	Reasons for:											
		Non availability of fund		Inadequacy of funds								Funds not received in time as per plan	
		Not aware as cheques are issued by the District Officials (DPIU) directly in name of the contractor		Escalation of prices		Budget estimates less		Restricted norms of expenditure of STA/ NRRDA		Others		Delay in sanction from the office of the Empowered Officer	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Assam	20	0	0	0	0	0	0	0	0	0	0	0	0
Bihar	18	0	0	2	11.11	0	0	0	0	0	0	8	44.44
Gujarat	20	0	0	0	0	0	0	0	0	0	0	0	0
Himachal Pradesh	20	0	0	0	0	1	5	1	5	0	0	0	0
Kerala	20	0	0	0	0	0	0	0	0	0	0	0	0
Orissa	20	0	0	0	0	0	0	0	0	1	5	0	0
Rajasthan	20	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	138	0	0	2	1.45	1	0.7	1	0.72	1	0.72	8	5.8

6.6 An Analysis of Road-Wise Efficiency in Utilisation of Funds

A stochastic frontier analysis was done with the road level data on the length of road in km as the output variable and the cost of labour and material as the inputs. A state-wise description of the efficiency scores is given in Chart-6.3. The box-plots give a state-wise distribution of the efficiency scores which depict the efficiency in resource utilisation for the roads in the sample states. The relative position of the box within the whiskers give the description of the efficiency levels vis-à-vis the median efficiency level in the state with the dot in the box showing the median efficiency score.

Chart-6.3
Boxplots of Efficiency Scores for roads (state-wise)



Discounting Assam, where very few roads were completed during the time of the survey, the most efficient states are Kerala and Gujarat. Interestingly, the flood-prone state of Bihar and the hilly state of Himachal Pradesh come out as the most efficient states in terms of utilising the funds. The statewise Table below summarises the efficiency scores.

Table 6.5
Mean efficiency score (state-wise)

States	Mean Efficiency Score
Assam	18.15
Bihar	34.27
Gujarat	24.60
Himachal Pradesh	31.48
Kerala	18.81
Orissa	22.39
Rajasthan	30.00
Overall	25.22

6.5 Conclusion

As far as availability of funds is concerned the programme gave a satisfactory picture at the project level where all states except Bihar reported timely availability of money though 43% of the states reported inadequacy of funds. The flood prone states like Bihar required more amounts for the maintenance of the roads and to match escalating price caused due to delay of work.

Hill state like Himachal Pradesh notified that inadequacy arises due to restricted norms of expenditure of STA/ NRRDA.

Bihar is the only state which complained of funds not received in time because of delay in sanction from the office of empowered officer further leading to inadequacy generated by price escalation. The sample districts of Bihar and the concerned contractors notified that funds were always delayed from Centre. This was in the wake of existence of multiple agencies and flood causing administrative problem in Bihar, delaying the release of funds from the Centre. Though it was brought to the notice of the study team that target remained unachieved due to lack of maintenance funds but it came to notice that the aforesaid fund released to Bihar left unutilized.

Chapter- 7

Impact of the Scheme

Objectives

It was hoped that continuation of the Pradhan Mantri Gram Sadak Yojna (PMGSY), through the 'Rural Roads' component of Bharat Nirman, would generate a multiplier effect in the rural hinterlands by linking production markets and services, improve employment opportunities in non-agricultural sectors and facilitate availability of public services in the rural areas. Ultimately, it was hoped that better connectivity would go a long way in improving the standard of life in the rural areas.

Thus, a very important aspect of this evaluation study is to see that how far all weather roads have contributed to the economic development of the rural areas connected by the newly built/upgraded roads. To assess the socio-economic impact of the scheme, an elaborate survey has been conducted. From the list of roads, two roads each have been selected under new connectivity and under upgradation respectively. For studying the habitation level impacts, one habitation has been selected randomly for each selected road. Further, from each habitation 10 beneficiary households have been selected randomly. The study aimed to take up 1400 beneficiaries for assessing the impact of rural roads but only 1380 could be studied owing to unavailability of two sample projects. A sample size of 200 beneficiaries from all the states was taken up except Bihar where it is 180 only.

The scope of the impact assessment is delineated under the following parameters:

I. Whether the 'Connectivity' is adequate or not?

-Along with a recounting of the salient features from Chapter-4, the information generated through the Notes of the Interviewer was used here (which detail their observations) and this was augmented with a discreet and critical reading of the transcripts of the Focus Group Discussions.

II. Socio-Economic Impacts.

-Here, the aim was to look at the reported income figures and to see if there is a statistically significant difference in mean reported incomes. In particular, the aim was to see if income generated through non-farming activities showed a significantly improvement and how it fared against the income generated from farming activities.

In lieu of a control group or a baseline, it was hoped that a statistically significant increase in income and its magnitude (also considering the short span of years since the inception of most of the road-work), would help us reach conclusions regarding this very basic indicator of impact of better connectivity.

-Secondly, from the answers to questions on ‘perceived ease in access’ to a host of amenities like hospitals, post offices, schools, etc., the conclusions regarding betterment in the level of ease in access to these infrastructure were sought to be drawn.

Table: 7.1: Beneficiary Profile (in percentage)

Sl. No.	State	Total No. of Sample Beneficiaries	Occupation in %						Education in %				
			Cultivator	Agricultural Labour	Artisan	Business	Service	Others	Illiterate	Up to Primary	Middle Class	Matric	Above Matric
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Assam	200	57	6	1.5	13.5	13.5	8	8	24.5	22	26	9
2	Bihar	180	48.89	28.89	2.78	5	2.78	11.67	28.89	13.89	12.78	18.33	14.44
3	Gujarat	200	71.5	5	1	7	6.5	9	41.5	17.5	12	17	6
4	Himachal Pradesh	200	50	1	3	4	26	16	8.5	12.5	21.5	38.5	13
5	Kerala	200	18	2.5	0	4	7.5	45	9	24	26	20.5	8
6	Orissa	200	39	6	1.5	12.5	6	35	7.5	27	26.5	12	7.5
7	Rajasthan	200	80.5	2.5	3	5	5	4	44.5	23.5	10.5	8.5	5.5
Grand Total		1380	52.17	7.1	1.81	7.32	9.71	18.48	21.01	20.51	18.84	20.14	8.99

7.1 Beneficiary Profile

A significant proportion (60%) of the beneficiary population in the sample is found to be engaged in agriculture (cultivators -52% and agricultural labour - 7.1%), which is evident from **Table 7.1**. The remaining 9.7% are into services, followed by 7.32% in business and 2% into artisanal activities. As far as the state wise composition is concerned, it can be seen that apart from the states of Kerala (18%), sample beneficiaries in almost all the states show overwhelming dependence on agriculture. All in all, almost 40% of the sample beneficiaries were into activities that can be considered non-agricultural. The literacy profile of the sample beneficiaries, as can be seen in Table 7.1, shows that nearly 40% of them are either illiterate (21%) or educated only up to primary levels (21%).

Almost half of the beneficiaries in the sample from the states of Gujarat (41.5%) and Rajasthan (44.5%) are illiterate. Also, nearly 12% of total sample beneficiaries (164 out of 1380) had no land holdings **Table 7.1(a)**. Around 48% of them owned land between the ranges of 0.1 to 3 acre of lands.

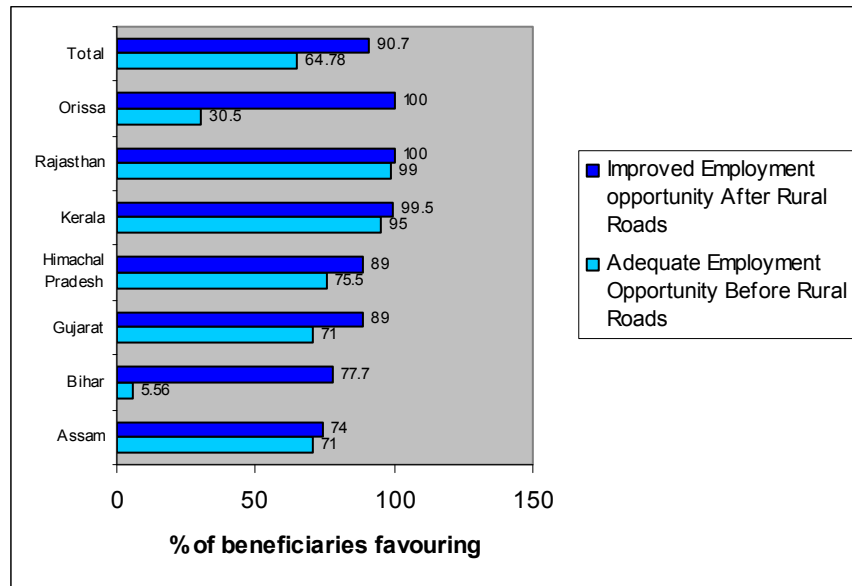
Table: 7.1(a): Beneficiary Profile (Landholding Size)

Sl.No.	State	Total No. of Sample Beneficiaries	Range of Land holding size (in acre)			
			Nil	0.1 to 3	3.1 to 5	5.1 to 10
1	2	3	4	5	6	7
1.	Assam	200	5	88	46	48
2.	Bihar	180	80	47	28	20
3.	Gujarat	200	14	131	26	18
4.	Himachal Pradesh	200	10	145	27	12
5.	Kerala	200	1	134	2	0
6.	Orissa	200	32	91	35	31
7.	Rajasthan	200	22	22	28	68
Grand Total		1380	164	658	192	197

7.2 Impact on Different Socio Economic Aspects:

The first assumption is that better road network in an area improves employment opportunities. A look at the data on the overall perceived impact on betterment of employment opportunities (Chart 7.1), 90% of the beneficiaries in all the sample states were of the opinion that the opportunities have improved after the roads have come into being. This figure has to be moderated by the fact that as many as 65% of the respondents had felt that there were adequate opportunities already in place in the region. A more detailed look at the figures arranged state-wise (in Chart-7.1) would reveal that the states where the roads have made a perceived difference in terms of generating employment opportunities are Orissa and Bihar.

Chart-7.1: State-wise Distribution of % of Beneficiaries' Perceived Opinion of Impact of Rural Roads on Employment Opportunities

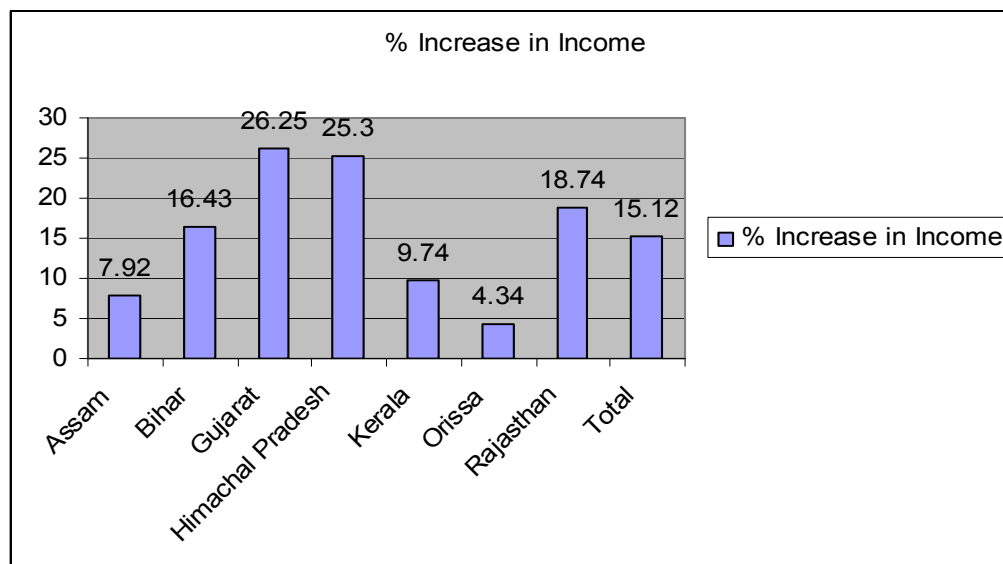


7.2.1 Impact on Income

Cultivators

The next point is the determination of actual impact on income and a disaggregated analysis of the same. As can be seen, from the **Chart 7.2**, beneficiaries (cultivators) in all the sample states show improvements in their income levels.

Chart: 7.2: State-wise Increase/Decrease in the Reported Annual Income of Cultivators in rural village before and after construction of Rural Roads

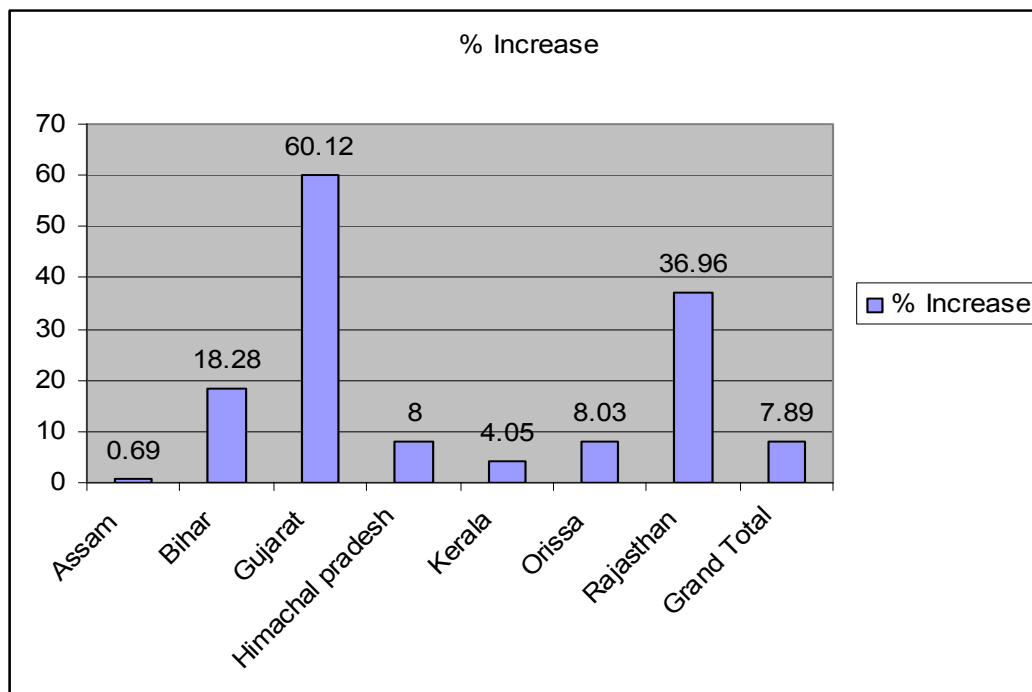


The trends show improvement ranging from 26.25% in Gujarat (where almost 70% of the sample beneficiary population consists of cultivators) to 4.34% in Orissa where (only 39% of the beneficiaries in the sample are cultivators). Respondents in states like Kerala where the proportion of sample population involved in agriculture is less (20%) have also reported increase in income levels to the tune of almost 10%.

Agricultural Workers

A similar increasing trend was found for the agricultural workers as seen in Chart 7.3. All the states showed increase in income levels. In Himachal Pradesh the reported number of respondents reporting increase in income is as high as 60.12% followed by the states of Rajasthan (at 36.96%) and Bihar (at 18.28%). There was no decrease in the income levels of agricultural workers in any of the states though Assam had shown a very meagre increase of 0.69%. This could be due to reasons external to the impacts of the scheme per se. This is because at the time of the field survey very few roads were completed in Assam. The over all picture shows an increase of income of agricultural workers at around 8%.

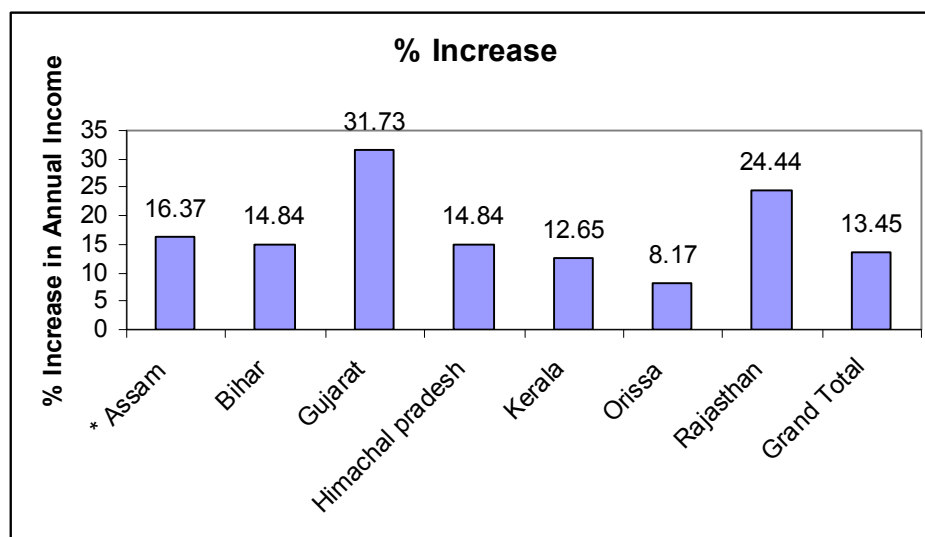
Chart 7.3 State-wise Increase/Decrease in the Annual Income of Agricultural Workers among the sample beneficiaries before and after construction of Rural Roads



7.2.3 Impact on Income on the Section not Involved in Agriculture Directly

The scheme has shown similar effect on people involved in work other than agriculture. The increase in income fluctuated between 31.73% in Gujarat to 8.17% in Orissa. All the studied states had shown significant increase in income. In totality 13.45% increase of income had been observed as aftermath of the rural road scheme in seven sample states

Chart 7.4: State-wise Increase/Decrease in the Annual Income of others (excluding cultivators and agricultural labourers)



7.2.4 Impact on Overall Agriculture Income

From Table 7.4, it is clear that Bharat Nirman had positively contributed in increasing the income of agriculture in the concerned area. This was mainly due to lowering of transportation cost and improved accessibility to markets. Though in most of the states farmers shifted from subsistence farming of traditional crops to marketable crops like Horticulture and off seasonal vegetables but this crop diversification an outcome of rural road, did not significantly contributed to agricultural income. The scheme succeeded in increasing agriculture income in the states like Gujarat (26.73%) where 76.5% beneficiaries were dependent on agriculture as well as states like Himachal Pradesh where only 50% of the beneficiaries were involved in agriculture but 25.64% increase was noticed and further in Kerala too, where only 20% of the studied beneficiaries were engaged in agriculture work had also shown increase of almost 29% in agriculture income.

Overall the scheme had increased agriculture income by 17.66% in the sample states collectively with Orissa showing lowest increase of 4.18%.

Table 7.4 Diversification of Crops and Agricultural Income

Sl. No.	State	Total No. of Sample Beneficiaries	Agricultural Income					
			Before Rural Road		After Rural Road		Increase/Decrease in Total Income	
			Income from Agriculture (per acre)	Average	Income from Agriculture (pre acre)	Average	Increased	Percentage of Increase
1	2	3	4	5	6	7	8	9
1	*Assam	200	300,254.00	7,158.50	350,754.00	8,047.50	177,800.00	12.42
2	Bihar	180	495,500.00	11,683.33	579,000.00	13,633.33	351,000.00	16.69
3	Gujarat	200	1,767,236.00	36,044.88	2,493,908.00	45,681.13	1,927,250.00	26.73
4	Himachal Pradesh	200	3,400,004.00	45,946.50	4,534,591.00	57,726.20	2,355,940.00	25.64
5	Kerala	200	207,000.00	1,035.00	267,000.00	1,335.00	60,000.00	28.99
6	Orissa	200	1,061,627.00	20,029.75	1,170,076.00	20,867.80	167,610.00	4.18
7	Rajasthan	200	278,965.00	16,850.50	366,035.00	19,923.00	614,500.00	18.23
Grand Total		1380	7,510,586.00	20,428.28	9,761,364.00	24,036.32	4,979,100.00	17.66

*In Assam, few roads are under construction

Table 7.5 Increase/Decrease in the Households Annual Income from Non-farm Activities in the Sample States

Sl. No.	State	Total No. of Sample Beneficiaries	Annual Income					
			Before RR		After RR		Whether Income	% age of income
			Total	Average	Total	Average	Increased	Increased
1	2	3	4	5	6	7	8	9
1	* Assam	200	3,140,000.00	15,700.00	3,666,000.00	18,330.00	526,000.00	16.75
2	Bihar	180	844,000.00	4,688.89	968,000.00	5,377.78	124,000.00	14.69
3	Gujarat	200	4,603,430.00	23,017.15	6,145,750.00	30,728.75	1,542,320.00	33.5
4	Himachal Pradesh	200	9,323,560.00	46,617.80	10,723,648.00	53,618.24	1,400,088.00	15.02
5	Kerala	200	9,140,736.00	45,703.68	9,612,896.00	48,064.48	472,160.00	5.17
6	Orissa	200	7,274,708.00	36,373.54	7,936,600.00	39,683.00	661,892.00	9.1
7	Rajasthan	200	3,810,000.00	19,050.00	4,746,000.00	23,730.00	936,000.00	24.57
Grand Total		1380	39,066,434.00	28,309.01	43,798,894.00	31,738.33	4,732,460.00	12.11
*In Assam, few roads are under construction								

7.2.5 Impact on Annual Income from Non-farm Activities

The scheme not only had a positive impact on agricultural income but also on income on non-farm activities as visible from Table 7.5 The increase in income of non-farm activities had shown increase between 33.55 % in Gujarat to 9.1% in Orissa. Overall increase in all the studied states collectively was nearly 12%. Even after controlling for the impacts of other factors, income levels from non-farm activities have improved considerably due to improved connectivity.

7.3 Impact on Social Aspect

Table-7.6: Accessibility of Economic and Social Services Before and After Completion of Rural Roads under the Scheme

Sl. No.	State	Total No. of Sample Beneficiaries	Responses of Beneficiaries regarding Accessibility of Economic and Social Services										
			Educational Institutions							Magnitude of Response in Percentage			
			Before Rural Road			After Rural Road							
			Yes	No	NA	IS	IM	NC	DET	IS	IM	NC	DET
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Assam	200	199	0	1	53 (26.5%)	118	0	0	26.5	59	0	0
2	Bihar	180	114	66	0	60 (33.33%)	87	33	0	33.33	48.33	18.3	0
3	Gujarat	200	190	9	1	147 (73.5%)	48	5	0	73.5	24	2.5	0
4	Himachal Pradesh	200	185	15	0	79 (39.5%)	85	35	0	39.5	42.5	17.5	0
5	Kerala	200	180	20	0	200 (100)	0	0	0	100	0	0	0
6	Orissa	200	200	0	0	197 (98.5%)	3	0	0	98.5	1.5	0	0
7	Rajasthan	200	199	0	1	199 (99.5%)	0	0	0	99.5	0	0	0
Grand Total		1380	1267	110	3	935 (67.75%)	341	73	0	67.75	24.71	5.29	0

7.3.1 Education

Apart from economic enhancement to the effected households Bharat Nirman predecessor of PMGSY had also contributed to the betterment of education to the faction. Interpreting from Table 7.6 it is found that Kerala where scope of scheme was very less observed that 100% beneficiaries believed that new connectivity had significantly improved education to the targeted group. Views were closely followed by Rajasthan and Orissa where 99.5% and

98.5% beneficiaries respectively agreed that education access improved significantly. Whereas in Assam, Bihar and Himachal Pradesh less than 50% population, i.e., 26.5%, 33.33% and 39.5% of sample beneficiaries respectively informed that there is significant improvement 59%, 18.3% and 42.5% beneficiaries canvassed of aforesaid state said it improved marginally only. Rural roads did not contributed at all in improving access of education to 18.3% sample beneficiaries in Bihar, 17.5% in Himachal Pradesh and 2.5% in Gujarat.

Table-7.7: Accessibility of Economic and Social Services before and After Completion of Rural Roads under the Scheme

Sl. No.	State	Total No. of Sample Beneficiaries	Responses of Beneficiaries regarding Accessibility of Economic and Social Services											
			Health Care Centers/Hospitals								Magnitude of Response in Percentage			
			Before Rural Road			After Rural Road								
			Yes	No	NA	IS	IM	NC	DET	IS	IM	NC	DET	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	
1	Assam	200	199	0	1	70	90	11	0	35	45	5.5	0	
2	Bihar	180	16	164	0	144	30	6	0	80	16.67	3.33	0	
3	Gujarat	200	161	37	2	142	56	2	0	71	28	1	0	
4	Himachal Pradesh	200	156	43	0	101	77	20	0	50.5	38.5	10	0	
5	Kerala	200	179	21	0	200	0	0	0	100	0	0	0	
6	Orissa	200	200	0	0	193	7	0	0	96.5	3.5	0	0	
7	Rajasthan	200	157	43	0	197	1	2	0	98.5	0.5	1	0	
Grand Total		1380	1068	308	3	1047	261	41	0	75.87	18.91	2.97	0	

NA = Not Available, IS = Improved , IM = Improved Marginally, NC = No Change, DET = Deteriorated

7.3.2 Access to Health Facilities

Table 7.7 clarifies that significant improvement has been reported in health sector by Kerala where 100% of the beneficiaries felt that, it was followed by Orissa and Rajasthan where more than 96% beneficiaries affirmed it. In Bihar 80%, Gujarat 71% and Himachal Pradesh 50.5% felt that there had been significant improvement in access to hospitals. Only in Assam (45%) majority of sample population informed marginal improvement and 5.5% felt there was no change. Looking at the bigger picture almost 75.87% of total 1380 beneficiaries informed there had been significant positive change in health care centers. Around 3% felt that there was no change at all.

Table-7.8: Accessibility of Economic and Social Services Before and After Completion of Rural Roads under the Scheme

Sl. No.	State	Total No. of Sample Beneficiaries	Responses of Beneficiaries regarding Accessibility of Economic and Social Services										
			Post Office										
			Before Rural Road			After Rural Road				Magnitude of Response in Percentage			
			Yes	No	NA	IS	IM	NC	DET	IS	IM	NC	DET
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Assam	200	190	0	0	33	128	9	0	16.5	64	4.5	0
2	Bihar	180	143	36	1	36	86	56	0	20	47.78	31.11	0
3	Gujarat	200	183	14	1	110	65	22	0	55	32.5	11	0
4	Himachal Pradesh	200	179	21	0	34	87	78	0	17	43.5	39	0
5	Kerala	200	180	20	0	200	0	0	0	100	0	0	0
6	Orissa	200	200	0	0	126	46	28	0	63	23	14	0
7	Rajasthan	200	131	68	0	188	9	2	0	94	4.5	1	0
-	Grand Total	1380	1206	159	2	727	421	195	0	20	47.78	31.11	0

NA = Not Available, IS = Improved, IM = Improved Marginally, NC = No Change, DET = Deteriorated

Table-7.9: Accessibility of Economic and Social Services before and After Completion of Rural Roads under the Scheme

Sl. No.	State	Total No. of Sample Beneficiaries	Responses of Beneficiaries regarding Accessibility of Economic and Social Services										
			Banking Facilities										
			Before Rural Road			After Rural Road				Magnitude of Response in Percentage			
			Yes	No	Not Available	Improved	Improved Marginally	No Change	Deteriorated	Improved	Improved Marginally	No Change	Deteriorated
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.	Assam	200	174	1	11	48	112	11	0	24	56	5.5	0
2.	Bihar	180	46	134	0	116	41	21	1	64.44	22.78	11.7	0.56
3.	Gujarat	200	123	69	4	67	89	35	0	33.5	44.5	17.5	0
4.	Himachal Pradesh	200	161	38	1	42	82	71	0	21	41	35.5	0
5.	Kerala	200	180	20	0	200	0	0	0	100	0	0	0
6.	Orissa	200	199	0	1	157	34	9	0	78.5	17	4.5	0
7.	Rajasthan	200	120	80	0	190	8	2	0	95	4	1	0
-	Grand Total	1380	1003	342	17	820	366	149	1	64.44	22.78	11.7	0.56

NA = Not Available, IS = Improved, IM = Improved Marginally, NC = No Change, DET = Deteriorated

7.3.3 Access to Post Office and Banking Facility

A look at the Tables 7.8 and 7.9 shows that all the beneficiaries in all the states had found that access to social services like banking facilities and post offices had improved (either marginally (IM) or significantly (IS). Further, there were marked differences on the impacts of access to post offices and banking facilities. Most of the respondents conceded that construction of roads have improved access to both post office and banking facilities significantly in the states of Kerala, Orissa and Rajasthan. In Kerala 100% beneficiaries reported significant improvement, in Orissa 63% sample beneficiary reported significant improvement in accessing post office while 78.5% felt that access to banking facilities has improved significantly and in Rajasthan 94% felt that post office access and 95% felt that access to banking facilities have significantly improved. But while a good number of beneficiaries (64.4%) have reported significant improvement in accessing banking facilities in Bihar, the improvement in access to Post Offices has marginally improved according to 47.78% of the beneficiaries whereas 31.1% felt that no improvement at all. In general Assam has shown that the improvement has been marginal in access to post office (64%) and banking facilities (56%). Over all, 20% of the respondents have reported significant improvement in accessing post offices and 64% have reported significant ease in reaching a banking facility. The proportions reporting no change in status are 31% for post offices and 11% for banking facilities. It can be concluded that the construction of rural roads have helped the respondents in accessing a banking facility more easily.

Table 7.10 Responses of Beneficiaries regarding Accessibility of Economic and Social Services

States	Total No. of Sample Beneficiaries	Bus Stand												Railway Station											
		Before Rural Road			After Rural Road				Magnitude of Response in Percentage					Before Rural Road			After Rural Road				Magnitude of Response in Percentage				
		Yes	No	NA	IS	IM	NC	DET	IS	IM	NC	DET	Yes	No	NA	IS	IM	NC	DET	IS	IM	NC	DET		
Assam	200	166	10	15	73	88	9	0	36.5	44	4.5	0	75	101	13	42	35	92	0	21	18	46	0		
Bihar	180	43	137	0	123	49	8	0	68.33	27.22	4.44	0	25	155	0	142	34	3	0	78.9	19	1.67	0		
Gujarat	200	140	59	1	95	85	19	0	47.5	42.5	9.5	0	129	67	4	74	90	31	0	37	45	15.5	0		
Himachal Pradesh	200	100	99	1	34	71	93	0	17	35.5	46.5	0	6	189	5	0	16	179	0	0	8	89.5	0		
Kerala	200	180	20	0	200	0	0	0	100	0	0	0	180	20	0	198	2	0	0	99	1	0	0		
Orissa	200	199	0	0	191	8	0	0	95.5	4	0	0	200	0	0	153	36	11	0	76.5	18	5.5	0		
Rajasthan	200	115	85	0	195	5	0	0	97.5	2.5	0	0	103	97	0	183	17	0	0	91.5	8.5	0	0		
Grand Total	1380	943	410	17	911	306	129	0	66.01	22.17	9.35	0	718	629	22	792	230	316	0	57.4	17	22.9	0		

7.3.4 Access to Bus Stand and Railway Station

Most of the respondents except those in Himachal Pradesh have reported significant to marginal improvement in ease of access to bus stands and railway stations due to the construction of roads in their area as reported in Table 7.10. In Himachal Pradesh many as 89% and 54% of the beneficiaries have reported no change in the status of connectivity to railway stations and bus stands respectively. Respondents from the states of Bihar, Kerala, Orissa and Rajasthan have mostly reported significant improved in accessing railway stations and bus stands. Gujarat and Assam have shown that there is mostly marginal improvement.

Over all, 66% of the beneficiaries have affirmed the fact that there is a significant change after the roads came into being in terms of access to bus routes and similarly 57% have reported improvement in this direction in terms of access to railways. 22% of the respondents in case of bus connectivity and 16% of the respondents, in case of rail connectivity, have acknowledged a marginal change only. 22.9% of the people interviewed have reported that there is no change in rail connectivity options, while the same figure is 9% for bus connectivity. ***Easy access also supported other government programmes whose empirical evidence are given in box IX***

(Box IX)

Supported other programmes

- Under poverty Alleviation programme at Nagathankavu road, Puzhakkal in Trissur, Kerala, a private dairy farm was established employing 4-6 persons and wholesale book depot had been established after the formation of road generating employment for 10-15 persons. Padamunda village in Bolangir, Orissa, the SHGs of women in the village were engaged in vegetable trade, rice processing and other small business. Pre-Dominate role of women had been increased due to direct link to the GP/ block offices. Due to road in Jayapurakateni village, Dhenkala, the intensity of malaria fever had been reduced as the health workers changed attitude of villagers.
- Moreover Retail trade/business based on micro financing had been increased and many SHGs had been started. Non-farm employment outside the village had become much easier and ensured more wage and bargaining power. The SC families had SCP income –generating schemes had good impact after this connectivity. The roads in Devidhar –(Chadiar to Rupehar,) and Lambagaon in Kangra, Himachal Pradesh Pradesh made it easier and cheaper to carry LPG cylinders resulting in its more use of LPG.

Table 7.11: Accessibility of Economic and Social Services before and After Completion of Rural Roads under the Scheme

States	Total No. of Sample Beneficiaries	Responses of Beneficiaries regarding Accessibility of Economic and Social Services																	
		Markets									Town/Urban Centers								
		Before Rural Road			After Rural Road			Magnitude of Response in Percentage			Before Rural Road			After Rural Road			Magnitude of Response in Percentage		
		Yes	No	NA	IS	IM	NC	IS	IM	NC	Yes	No	NA	IS	IM	NC	IS	IM	NC
Assam	200	189	10	0	64	89	16	32	45	8	176	0	13	73	76	18	37	38	9
Bihar	180	43	137	0	126	45	7	70	25	3.89	33	145	2	115	55	9	64	31	5
Gujarat	200	167	32	1	162	34	4	81	17	2	165	32	2	155	39	4	78	20	2
Himachal Pradesh	200	126	74	0	136	50	13	68	25	6.5	141	59	0	127	49	24	64	25	12
Kerala	200	179	20	1	200	0	0	100	0	0	179	20	0	199	0	0	100	0	0
Orissa	200	200	0	0	199	1	0	99.5	0.5	0	200	0	0	196	1	0	98	0.5	0
Rajasthan	200	115	84	1	199	1	0	99.5	0.5	0	114	85	0	196	2	0	98	1	0
Grand Total	1380	1019	357	3	1086	220	40	78.7	16	2.9	1008	341	17	1061	222	55	77	16	3.99

7.3.5 Impact on Social Infrastructure

The scheme helped in connecting the remote areas to mainstream through nearby markets, urban areas and town's centres as Table 7.11 interprets. 78.7 % of the total sample beneficiaries felt that accessibility to markets had improved significantly. Whereas 16% felt that the situation after the project completion had improved marginally. In Kerala 100% population informed that the ease of access had improved significantly. Followed by Orissa and Rajasthan where 99.5 % of beneficiaries felt that new connectivity had improved market access considerably. In Himachal Pradesh 68% to 63.5%, Gujarat 81% to 77.5% and Bihar 70% to 63.8% of beneficiaries felt that the scheme had satisfactory impact on easing the access to markets as it has shown significant improvement. Only in case of Assam the outcome was not very pleasant, 45% of beneficiaries felt marginal improvement and 8% felt no change in accessing markets. Whereas in accessing town/urban centres, 38% informed marginal improvement and 9% reported no change of sample beneficiaries felt that the scheme had not contributed significantly in improving market access.

Around 77% of studied beneficiaries said that the situation after the completion of projects access to nearby town and urban centres had improved considerably. In All the sample states except Assam majority of beneficiaries are satisfied with the accessibility to nearby towns/urban areas. In Assam effect of the programme is little satisfactory on connecting the targeted group to urban areas.

Table-7.12: General Impact of Rural Roads on the Households before Rural Roads

State	Total No. of Sample Beneficiaries	Before Rural Roads								
		(%) Improvement in situation before rural roads								
		Economic well being	No. of Vehicles			Enrolment of children	Employment opportunities	Patients seeking treatment	Immunisation facilities	Others
Bicycle	Rickshaw		Motorized vehicle							
Assam	200	193 [96.50%]	199 [99.50%]	198 [99.00%]	151 [75.50%]	199 [99.50%]	142 [71.00%]	163 [81.50%]	165 [82.50%]	3 [01.50%]
Bihar	180	8 [04.44%]	129 [71.67%]	10 [05.56%]	23 [12.78%]	129 [71.67%]	10 [05.56%]	14 [07.78%]	31 [17.22%]	1 [00.56%]
Gujarat	200	159 [79.50%]	124 [62.00%]	75 [37.50%]	108 [54.00%]	189 [94.50%]	142 [71.00%]	150 [75.00%]	145 [72.50%]	43 [21.50%]
Himachal Pradesh	200	186 [93.00%]	0 [00.00%]	0 [00.00%]	11 [05.50%]	195 [97.50%]	151 [75.50%]	108 [54.00%]	190 [95.00%]	50 [25.00%]
Kerala	200	127 [63.50%]	150 [75.00%]	0 [00.00%]	101 [50.50%]	199 [99.50%]	190 [95.00%]	100 [50.00%]	187 [93.50%]	3 [01.50%]
Orissa	200	200 [100.00%]	200 [100.00%]	200 [100.00%]	200 [100.00%]	199 [99.50%]	198 [99.00%]	198 [99.00%]	198 [99.00%]	3 [01.50%]
Rajasthan	200	91 [45.50%]	40 [20.00%]	15 [07.50%]	48 [24.00%]	189 [94.50%]	61 [30.50%]	122 [61.00%]	93 [46.50%]	1 [00.50%]
Grand Total	1380	964 [69.86%]	842 [61.01%]	498 [36.09%]	642 [46.52%]	1299 [94.13%]	894 [64.78%]	855 [61.96%]	1009 [73.12%]	104 [07.54%]

Table-7.13: General Impact of Rural Roads on the Habitation After Rural Roads

State	Total No. of Sample Beneficiaries	After Rural Roads								
		(% of Beneficiaries Recorded Improvement)								
		Economic well being	No. of Vehicles			Enrolment of children	Employment opportunities	Patients seeking treatment	Immunisation facilities	Others
Bicycle	Rickshaw		Motorized vehicle							
2	3	13	14	15	16	17	18	19	20	21
Assam	200	156 [78.00%]	162 [81.00%]	170 [85.00%]	170 [85.00%]	166 [83.00%]	148 [74.00%]	159 [79.50%]	160 [80.00%]	14 [07.00%]
Bihar	180	147 [81.67%]	96 [53.33%]	22 [12.22%]	36 [20.00%]	155 [86.11%]	140 [77.78%]	162 [90.00%]	156 [86.67%]	0 [00.00%]
Gujarat	200	177 [88.50%]	131 [65.50%]	124 [62.00%]	130 [65.00%]	176 [88.00%]	178 [89.00%]	183 [91.50%]	182 [91.00%]	73 [36.50%]
Himachal Pradesh	200	191 [95.50%]	15 [07.50%]	8 [04.00%]	197 [98.50%]	198 [99.00%]	178 [89.00%]	189 [94.50%]	196 [98.00%]	113 [56.50%]
Kerala	200	128 [64.00%]	200 [100.00%]	4 [02.00%]	200 [100.00%]	199 [99.50%]	199 [99.50%]	197 [98.50%]	199 [99.50%]	3 [01.50%]
Orissa	200	200 [100.00%]	200 [100.00%]	200 [100.00%]	200 [100.00%]	200 [100.00%]	200 [100.00%]	200 [100.00%]	198 [99.00%]	3 [01.50%]
Rajasthan	200	195 [97.50%]	144 [72.00%]	100 [50.00%]	136 [68.00%]	200 [100.00%]	200 [100.00%]	200 [100.00%]	199 [99.50%]	1 [00.50%]
Grand Total	1380	1194 [86.52%]	948 [68.70%]	628 [45.51%]	1069 [77.46%]	1294 [93.77%]	1243 [90.07%]	1290 [93.48%]	1290 [93.48%]	207 [15.00%]

7.3.6 Impact on Lifestyle and Socio Economic Conditions

The study also tried to assess the impact through socio economic indicators on the basis of Information gathered from total 1380 sample beneficiaries.

On analyzing and interpreting the data in **Table 7.12 and 7.13** it was found that over all economic well being had improved significantly in all the states. Taking picture as a whole around 86.5 % of people as comparison to 70% earlier reported better economic well being. Looking at the availability of manual and motorized vehicle it was found that the scheme had positive impact on availability of vehicles. Number of vehicle utilized increased and this increase was significant in motorized vehicle. An increase of 7.69 % in number of bicycle used 9.42% in rickshaw and around 31% in motorized vehicle had been reported.

In five out of seven states number of vehicles available had increased and the composition of mode of transports tilted more towards motorized vehicles. In Orissa there was no scope of improvement regarding vehicles as they were aptly available even before the project.

Enrolment of children declined over all after the construction of rural roads. This decline was due to decline in number of enrolments in Assam and Gujarat. In Assam 16.5% of decline and in Gujarat 6.5% of decline in enrolment was noticed after rural roads. Rajasthan and Orissa informed that after the completion of the project 100% enrolment in the studied areas were noticed. The scheme had contributed in generating both direct and indirect employment opportunities in all the sample states resulting in 25.29% increase in aggregate.

In Bihar impact was clearly visible with employment increasing more than 70%. Better Access to health centers was indicated by increase in the number of people availing medical facility. It increased from nearly 62% to 94%. The impact was also visible in enhanced immunization facilities resulting in 20.36% more babies and children getting immunized.

All the sample states showed more positive influence on all socio economic aspects in comparison with the negative impact on the socio economic conditions.

(Box X)
Positive impact

Roads had positive impact on various aspect of life on the targeted group. \

- Jajori-Barmanipur, Dalangghat, Nagaon, Assam generated multiplier impact in rural economy as per the FGD.
- Dibruval Dehingio Gaon, in Pepole started sending their children to near by English medium school at Borborua and Dibrugarh.
- Romai – Saolikota, Lahwal, According to one estimate of a group, tea leaves export from this village will increase by 1 crore which will show positively on standard of living of the entire people of the village
- Due to Saviyohome road, Puzhakkal in Trissur, Kerala two farmer society employing 355 people, started operating more actively on side of road as compared to earlier. Another Road Nagathankavu road had reduced the distance to pilgrimage Centre (Guruvayur temple) / tourist place considerably. These roads had cut down a kilometre walk of students to catch the bus.
- Kodankara Valiyakulam Road, Parasala, in Thiruvananthpruam had improved social status of the local people considerably as informed by them. Attupuram Chalakkara Road in same block increased employment opportunity by Facilitating approach to Poovar holiday resort.
- Venpagal LPS Road, Athiyanoor, connected two localities. One locality was having homeopathy and the other locality had allopathic so both side public was benefited.
- Padamunda village, Bolangir in Orissa mobility of labour increased Rinbachan village, Dhenkala got faster connectivity to the market as 40 persons were engaged in transporting goods and passengers.
- Jayapurakateni village in Dhenakala Reduction in cost of transportation of inputs/ outputs lead to reduction in poverty, villagers started growing of vegetables as Rangili irrigation water reached to them & 50% of land is irrigated to earn good income. Mobility of labourer and wage rate increased.
- Gopali chowk Aamagach to Tiwari tola via Hujur Nagar santhali Tola, pirpainty Khalgaon in Bhagalpur, Bihar People felt they were not humans before the connectivity, they could not move out of the village in rains and floods but after connectivity they can earn livelihood even in rainy season.
- Devidhar – Chadiar to Rupehar, Lambagaon in Kangra Himachal Pradesh Pradesh many habitants have started construction of houses on side of road due to improved facilities of transportation and construction material
- Before rural roads it was difficult to take patients to the hospitals and even the doctors in PHCs and sub centres were reluctant to join service in the unconnected habitation. But due to connectivity the problem has been solved. The infant mortality rate, mother mortality rate and mortality rate as a whole seems to decline due to easy and possible health accessibility.

7.3.7 Impact on Various Aspects as Inferred from Focus Group Discussion

In Assam overall impact on studied district of rural road was positive. Focus group discussion acknowledged the improved access to services, low transportation cost, multiplier effect due to linking of production center to market services. English medium schools in District become accessible. In spite of this few of the projects failed to generate desired impact, mainly because of in apt planning. In case of Oakland grant No: 37 NHC the village was shifted so almost nil effect is there, however, it has come out of Focus Group Discussion that the selected road covers a longer route, so villagers prefer to use a shorter route. Dibrugarh Dehingio gram was not left with cultivable land as it was taken for railway construction, so impact on agriculture was trifling. similarly Changai Gohan gam located 2 km away from Highway and I km road provided by state government made the new connectivity a futile effort to create multiplier impact. ***Some minor negative impacts were also informed by Beneficiaries as given in Box XI.***

(Box XI)
Negative Impact

- Gnormora – Basmatta connectivity in Lahwal, Dibrugarh Assam lead to increase in due to heavy traffic on the road. Accident had also increased due to fast moving traffic
- Thural to Bharanta connectivity in Lambagaon, Kangra, and Himachal Pradesh Pradesh Water flowing from the culverts was not canalized and hence ran into the field of the habitation which resulted in soil erosion.

In **Bihar** in Nalanda district criminal activity reduced, quality of life improved. Access to better quality seeds, shift towards cash crops, increase in enrollment of girl child, villages accessible during monsoon, prevention of water logging in houses, increase in awareness campaign of NREGA, old age pension, Indira Awas Yojana, etc. Increased earning from handicraft industries like silk weaving etc was indication of improved life due to connectivity in studied area.

In **Gujarat** connectivity helped in connecting habitation and increased attendance of students even in rainy season. Night travel became safer and travel time was shortened. Villages became accessible to Milk Cooperative societies.

In **Himachal Pradesh** earlier conventional method of fuel was used like wood, cow dung cake etc, but due to connectivity gradually habitants shifted to the use of LPG. use of DTH and white goods increased like fridge, colors TVs, etc. from conventional crop paddy, wheat and maize farmers have started cropping vegetables to add to their incomes. In construction of house conventional material were replaced by bricks and cements. This further generated employment opportunities for skilled and semi-skilled laborers.

Many took to transportation business. Income increased due to low transportation cost, coming up of new business such as grocery shops, hardware shops, electronic shops, etc. Migration from the area also declined.

Even in state like **Kerala** where new connectivity scope was negligible, impact was positive and welcomed. Commuting became easier small scale industries sprang up and expanded like bee keeping, weaving units, stone quarries, mineral water manufacturing, poultries, book binding and brick making etc this was shown on improving membership of farmers credit society membership too.

In **Orissa** connectivity boosted up trade and socio economic conditions but crop pattern had not been changed due to non-availability of adequate irrigation facilities in the selected districts.

In **Rajasthan** new connectivity improved over all social well being of the targeted group. It boosted rural economy. Increase in number of motorized vehicle, facilitating child birth, easy access to immunization, vaccination and other services, increase in mobility of man and material indicated usability and positive impact of rural road on society. It further extended social relations of the targeted group.

7.4 Findings:

- (i) The evaluation report assessed the impact on the habitation where 60% of population depends on agriculture for their living. 23% illiterate and another 23% literate till primary
- (ii) Over all assessment of the data says that increase in income of cultivators which comprises 52.2% of benefited group out of which 48% of them owned less than 3 acres of land had shown 15.12% increase in income. Agriculture workers and others had shown 7.89% and 13.45 % increases respectively.
- (iii) Overall agriculture income increased by 17.6% whereas income from non-farm activities increased by 12.11%.
- (iv) Bihar, Gujarat, Himachal Pradesh and Rajasthan had shown the impact above national average. In case of Bihar, Orissa and Assam agriculture income was lower than national average by 0.97%, 13.48% and 5.24 respectively.
- (v) Income of agriculture labourer is more than five times of national average in Rajasthan (36.96%) and Gujarat (60.12) of national average (7.89%). Only in case of Kerala (4.05%) and Assam (0.69%) not much of increase is observed.

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- (vi) In Assam Roads were under construction so impact could not be fully assessed.
 - (vii) In Orissa impact on cultivator's income was merely 4.34% thus the increase from income was also less.
 - (viii) In Kerala increase in income of agricultural labourer and income from non- farm activity was around 5% or less.
 - (ix) For more than 30% of the target group in Assam and Gujarat, informed that access to social services (Post office, banking, Health centers, education centers, bus stand and railway stations, etc.) had improved marginally. In other studied states access to the services improved significantly as affirmed by majority of the target group. In Kerala 100% of the beneficiaries acknowledged significant improvement.
 - (x) The objective of connecting these habitations to nearby town centers and markets was fully achieved in Kerala. In Orissa and Gujarat more than 95% beneficiaries canvassed agreed to smooth connectivity. In Himachal Pradesh, Gujarat and Bihar around 63% to 80% of people studied informed improved connectivity to market and town centers.
 - (xi) Taking picture as a whole around 86.5 % of people as comparison to 70% earlier reported better economic well being. In five out of seven states number of vehicles available had increased and the composition of mode of transports tilted more towards motorized vehicles
 - (xii) Impact of Bharat Nirman could not be fully measured in case of **Hilly and tribal Dominated area** as in the sample state from this strata, Assam (also comes in the category of **Flood prone area**) did not completed the projects studied at time of field study. Even then from the basis of the information collected it had shown positive impact on Income, aces to social services though it was not very high.
 - (xiii) State like Bihar where **Institutional capacity was inadequate (Flood prone area)** the projects had yielded desired results. Except Agriculture income, Increase in income was above national average on all non- farm activities and others. From 40% to 70% of the beneficiaries reported significant improvement in access to social services and market.
 - (xiv) Appraising the Rural road component of Bharat Nirman on **key states** like Gujarat, it was found that Income of all sectors including farm activity and non- farm activity had increased significantly. Though more than 30% and less than 50% of population informed of marginal

improvement in access to social services but around 80% beneficiaries acknowledged better connectivity to market

- (xv) **Problematic areas where transporting material is difficult like** Himachal Pradesh (**comes in category of key state and hilly and tribal dominated area**) had also shown increase in income above national level increase due to rural roads. Around 68% of people affirmed better connectivity to market.
- (xvi) Sample state Orissa from Category "**Flood prone area**" increase in income of cultivator's was as low as 4.34% .The state showed 4.18% increase in agriculture income and increase in income from non-farm activities was 9.1% which was far below national average. But the objective of connecting habitation to market was achieved, as nearly 99% of beneficiaries admitted easy and better connectivity to market and town centers.
- (xvii) **Desert Area**, Rajasthan had shown that the Income of Agriculture laborer and income from non- farm activities increased more than double then of national average. More than 90% of studied beneficiary admitted significant improvement in access of social services. And 99% of Population agreed that the project had connected market and town centers which were not there before.
- (xviii) State where there was not much scope to improve Kerala, **Zero targets for new connectivity** had also had positive impact of rural road. The objective of connecting these habitations to nearby town centers and markets was fully achieved in Kerala. 100% of beneficiaries canvassed informed of remarkable improvement in income, and connectivity to social service centers.
- (xix) Rural roads helped in eliminating rural poverty, improving living standard, connecting unconnected habitation to mainstream and generating direct and indirect employment opportunities

Chapter 8

Constraints and Suggestions

The study found out many constraints and problems that were uncovered during the field study of PEO, many of them were already mentioned by the Quick Report on PMGSY (Report No: 193). On this basis a few measures are suggested to plug the loopholes for better implementation of the scheme.

8.1 Resources/Funds

- 1) Estimated cost by the authority varied from the actual cost resulting in cost over-runs, as seen in the case of Rajasthan where estimates fell short of actual expenditure all through the study period.
- 2) Provision should be made to account for escalation of costs.
- 3) While estimating cost wage rates prevailing in individual states and other aspects should be considered as they differ widely from state to state.

8.2 Provision of Quality Check

- 1) There remains concerns over contractors' use of substandard materials, stones, bricks, etc., lack of timely repairing/ maintenance, lack of attention to drainage/building culverts, and improper black-topping. A particular instance that can be cited is that of Himachal Pradesh, where in spite of all the provisions for quality tests, the standards were not met. Such practices lead to sub-standard quality of roads. The other point being that the responsible PIUs failed to report this. The PIUs should be made aware regarding this and inspections should be made more rigorous.
- 2) It is observed that meetings of monitoring committees were irregular. There is an urgent need to constitute this Committee at state, district and block level to bring more transparency and ensure quick implementation of the work.
- 3) There should be a rigorous block level monitoring in the lines of inspections carried out by the State and National level monitors.
- 4) Very few inspections were made by the SQMs, and even then, they did not visit each and every road constructed under the scheme. It is essential that the schedule of visit for SQM and NQMs should be extended to cover every road or at least as much as possible.

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- 5) Many of the sample roads had shown signs of weathering and, thus, the quality monitoring system needs to be more vigilant and strict to ensure that quality standards were met. Concerns, in this line, were also expressed in Report No: 193 about the quality aspect of rural roads.

8.3 Acquisition of Land

- 1) One of the major constraints was acquisition of land as mentioned in PMGSY report (Report No: 193). There were issues regarding compensation to land owners, thus the compensation provisions for acquisition of lands for rural roads need to be revised.
- 2) No proper pre-feasibility study was done, as a result DPRs prepared had no relevance. For example, in certain cases parts of the land were found to be allotted for some other purpose already.

8.4 Online Monitoring

- 1) It came out in study that either computerized bank branch was not selected or they were not backed by skilled staff. Center and State authorities should ensure selection of computerized branches of banks with skilled work force and funds should be released once the branch as per the norms is selected.
- 2) The study found out that improper computerised infrastructure and absence of enough skilled staff was coming in the way of maintenance of proper records. Report 193 also reported such incidences. This matter raises issues about the OMMAS and should be looked into.
- 3) It was found that lack of power back up hindered the work of maintaining timely data. Therefore it is suggested that for uninterrupted power supply, generator/solar power system has to be provided to PIUs along with the trained staff.
- 4) State authority should ensure information entered should be authentic so that observers and evaluators of the programme are not misguided.

8.5 Executing Agency

The PMGSY Report (Report No.-193) informed about multiplicity of executing agencies in few states including Rajasthan. In the Bharat Nirman study it was found that Rajasthan is not the only case. Bihar also has in existence multiple executing agencies which delayed the official work and created concerns of non-uniformity. Every state should inform their executing agency to centre along with the DPRs and after that no other agency should be

taken up and designated as executing agency to ensure uniformity and timely completion of works.

8.6 Maintenance

- 1) Many of the states kept small percentage of contractor's payment as a guarantee for maintenance of road for another five year from the completion of the project as there is no provision of penalties if the roads were made of poor quality. After five years of completion of the project funds for maintenance should be ear marked on the basis of road length, weather condition and types of vehicle using it. Maintenance of the roads should be on equal priority as it will lead to deterioration of roads and more expenses on maintenance later on if not done timely
- 2) Contract should include the responsibility of repairing the road even after completion of stage –I and repairing of road if the need arises due to bad quality of road or due to normal weather condition (Knowing weather of their area and including all seasons)
- 3) Flood prone states require more funds for the purpose of maintenance like in Bihar and Assam where heavy rain fall causes depletion of funds already put into project unless regular maintenance is done.
- 4) Side shouldering of road should be done properly, immediately after every rainy season.
- 5) During rainy season fungus develops on the road which makes it slippery there should be some provision to deal with it to serve the purpose of all 'weather road'.

8.7 Staff

- 1) Lack of skilled staff lead to delay of official work as either they were found to be untrained or unskilled regarding preparation DPRs, managing OMMAS record, etc. A training programme for them should be there
- 2) Exclusive staff for the implementation and supervision of rural roads should be provided.
- 3) Staff should be given training at block level for smooth, timely, efficient and effective functioning of the work.

8.8 Timely Completion of Projects

- 1) It was found that delay in work further escalates price of raw material and overall cost of the project. To ensure timely completion of projects provision of penalty should be there in case of time overruns.
- 2) Work should be started only when all land disputes were resolved and habitations were identified.
- 3) Releasing of funds at the time of monsoon delays the work and escalates price so funds should be released in accordance with apt time for construction.
- 4) Provision of acquiring land and compensating should be there for speedy implementation of the work. In many cases the person owning the land denied to donate the land leaving the project uncompleted thus causing wastage of huge finance, manpower and time.
- 5) Time should be relaxed up to 12-14 months in the hilly areas where it is difficult to transport raw material.

8.9 Role of PRIs/PIUs

- 1) Adequate infrastructure like vehicles, computers and staff etc for monitoring the scheme at PIU level should be provided as lacking of these leads to poor quality of roads.
- 2) It came out from the field study that in many projects either PRIs did not take interest or they were not involved. It is suggested that they should be involved in planning and implementation.

8.10 Coverage

- 1) It was found that roads failed to achieve the desired objective as they left short gaps; they were in parallel to some other road and habitations identified shifted from that area. So it was advised to identify deserving habitation on ground.
- 2) Field study found that in many cases very deserving and eligible habitation was left out because either they were slightly lower than the 1000+ population criteria or they were scattered in a way which if connected through a road will fulfill the criteria but not as a unit.
- 3) It was found that feasibility to connect some identified Habitations seems to be near to impossible which has to be resolved at district level in consultation with PRIs.

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- 4) It was proposed that to build up its capacity to achieve the targets the Ministry of Rural Development will lay down a scheme of incentives/disincentives to the states/districts and issue necessary directions time to time for smooth implementation of the second phase of the Bharat Nirman Programme.

8.11 Guidelines

- 1) Adherence to guidelines should be supervised at every level and action should be taken if compromised.
- 2) As per the guidelines thickness of bituminous layer need to be 30 mm this was not followed in many cases. This thickness needs to be increased which have construction sites and heavy material needs to be transported.
- 3) Guidelines should provide different norms for different area as per the climate. Like in flood prone areas roads need to survive n bear extreme condition so norms should be different regarding thickness and material.
- 4) As per the guidelines the roads should not require maintenance for next five years from the day of construction. But if it does, it was not specified on whom the responsibility rest with and what action should be taken on whom in violation of this norm. Such roles and actions should be clearly defined and strictly followed.

8.12 Awareness

- 1) Awareness should be part of the project to seek people's cooperation and to prevent them by spoiling and cutting of the road for their personnel purpose like passing water through pipes.
- 2) Awareness campaign or the training program for PRIs (Gram Pradhan, etc.) should be conducted by the implementing agency regarding their role in such matters.
- 3) To generate awareness, transparency and suitability in this scheme it is required that before starting the construction work the DPR may be discussed with the beneficiaries to look into their requirements.
- 4) People should be made aware of different stages of the programmes and its different aspects so that they can contribute in quality control and helps authority to notice and take action in case of violation of guidelines. They should be involved in Planning and Implementation.

8.13 Construction of Road

- 1) It was observed that Cross Drainage (CD) structure such as culverts, minor bridges and causeways were not upgraded and water logging during monsoons season ultimately lead to damage of all weather roads. Thus provisions should be made for upgrading CD structure while providing new connectivity and making conduits too to provide irrigation/drainage.
- 2) It was informed that regarding drainage Bharat Nirman has the provision to provide roadside drainage only when the road is passing through a locality and not when passing through an agriculture land this matter should be looked into.
- 3) The height of culverts wall need to be increased to save the villages. In certain cases pavement need to be raised where water table rises due to capillary action.
- 4) Width of road on turns in hilly areas should be increased for the safety purpose.
- 5) Government should make some liberal policy to shift civil construction materials without any hindrance.
- 6) Joint ventures may be allowed in projects costing more than Rs.5 crore in case if the contractors are not big enough to take project individually.
- 7) In few places like in Bihar law and Order problem delayed construction work. Extortion calls discouraged contractors to take up work. Either security should be provided or the payment made to security personnel should be considered. Apart from this, State and district authorities should be reprimanded if such cases happen.
- 8) There are places where on certain patches people did not shift their houses as the issue of displacement was not addressed at all.
- 9) Thickness for carpet in PMGSY road is 20 mm and for seal coat is 4mm. These are executed by pavers. The contractors mentioned that it is very difficult to lay this thickness with pavers. Specifications for seal coat to be laid by pavers be modified the minimum thickness of seal coat should thus be raised to 9mm.
- 10) It was found in few places for drainage purpose old pipes of small diameter was used thus compromising on the quality and durability of the whole structure. Such cases should be strictly dealt.

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- 11) There should be flexibility in design considering the terrain and rural requirement, so that bigger size bridges can be accommodated as per requirement. Inside pipes across the road may be planted at some points, so that plastic pipes used in irrigation could be inserted in to it and unnecessary digging and water logging could be avoided.
 - 12) As was brought up in report no: 193 the present study also faced same plea by villagers to construct double link road to save time.
 - 13) It is brought out in light from the Focus group discussion that most of the roads would have served far better purpose if small patch of 500 meter to 2 kms would have been constructed as well. Considering this it is suggested that planning should be conducted after ground survey in consultation with PRIs.
 - 14) As per local needs some bigger projects may be tied up with these small projects to enhance the efficiency and utility.
 - 15) It was noticed that speed breakers in front of temples, mosque and schools etc were not built which should be installed as it is must to prevent accidents.

8.14 Employment

- 1) Local labourer should be given preference in construction of rural roads. If contractor cannot take all of them then certain percentage should be fixed to get employment and PRIs should look into the matter.
- 2) Provision is made such that if local people are ready to work and the wage rate falls under the estimates than contractor will have to give them employment.

8.15 Miscellaneous

- 1) Width of road should have flexibility within certain limits to go well with the local requirement, area and population. In many cases Density of population and scattered nature of dwelling unlike that of other states, it is suggested that norms for 8 meters width of road may be relaxed to 6 meters.
- 2) The data for new connectivity and up gradation maintained if does not synchronies at state, district and block level then the reasons should be given. Complete transparency of funds till road level should be maintained.

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- 3) As per standard bidding documents of MORD rates can be quoted lower than the standard rates. In order to get qualified, most contractors often quote lower rates compared to the practicable ones leading to compromise in quality. So it's suggested that the provision for accepting lower rates should be dispensed with.
 - 4) Sign boards should be in vernacular language rather than in English.
 - 5) Muck disposal points should be identified to avoid environmental degradation and loss of flora and fauna.
 - 6) SLSC must meet on regular intervals to review the progress and to remove the hindrances such as land disputes, lack of training to staff, etc.

Abbreviations Used:

ADB:	Asian Development Bank
BDO:	Block Development Officer
BN:	Bharat Nirman
C-DAC:	Centre for Development of Advanced Computing
CN:	Core Network
CNCPL:	Comprehensive New Connectivity Priority List
CPWD:	Central Public Works Department
CRRI:	Central Road Research Institute
CUPL:	Comprehensive Up-gradation Priority List
DDC:	Deputy District Collector
DLRRP:	District Level Rural Road Plan
DM:	District Magistrate
DPIU:	District Programme Implementation Unit
DPR:	Detailed Project Report
DRDA:	District Rural Development Agencies
DRRP:	District Rural Road Plan
EE:	Executive Engineer
GIS:	Geographic Information System
GRRDA:	Gujarat State Rural Roads Agency
JRY:	Jawahar Rozgar Yojana
KSRRDA:	Kerala State Rural Road Development Agency
MIS:	Management Information System
MLA:	Member of Legislative Assembly
MNP:	Minimum Needs Programme
MP:	Member of Parliament
NABARD:	National Bank for Agriculture and Rural Development
NBCC:	National Buildings Construction Corporation
NC/UP:	New Connectivity/Upgradation
NCAER:	National Council for Applied Economic Research
NHPC:	National Hydro Power Corporation
NIC:	National Informatics Centre
NPCC:	National Projects Construction Corporation
NQM:	National Quality Monitors
NREP:	National Rural Employment Programme
NRDA:	National Rural Road Development Agency
NRDC:	Rural Road Development Committee
NTPC:	National Transport Policy Committee
OMMAS:	On-line Management, Monitoring and Accounting System
OMS:	On-line Management System
PEO:	Programme Evaluation Office

PEO:	Programme Evaluation Organization
PIU:	Programme Implementation Unit
PMGSY:	Pradhan Mantri Gram Sadak Yojana
PRI:	Panchayati Raj Institutions
QC:	Quality Control
R&B:	Roads and Buildings
RDD:	Rural Development Department
REO:	Regional Evaluation Office
REO:	Regional Evaluation Officer
RLEGP:	Rural Landless Employment Guarantee Programme
SLSC:	State Level Standing Committee
SOR:	Schedule of Rates
SP:	Superintendent of Police
SQC:	State Quality Control Coordinator
SQM:	State-level Quality Monitors
SRRDA:	State Rural Road Development Agency
SRRP:	State Rural Road Plan
STA:	State Technical Agency
YBU:	Yojana Bhavan Unit
ZP:	Zila Parishad

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**Constitution of Consultancy Evaluation cum Monitoring Committee
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Rural Roads Component of Bharat Nirman**

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3	Adviser/Director Transport, PC	Member
4	Shri Jitendra Kumar, Director, Rural Connectivity, M/oRD, New Delhi	Member
5	Dr. B.P. Chandrasekhar, Director (Tech), NRRDA, New Delhi	Member
6	Dr. Vikram Kumar, Director, Central Road Research Institute (CRRI), New Delhi	Member
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