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Research Article

Development of Rural Roads through Bharat Nirman Scheme in India

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Introduction

Bharat Nirman is a flagship programme of government of India under the aegis of Ministry of Rural Development conceived as time bound business plan. It is focus on six basic rural infrastructures, namely, rural roads, telephone connection, irrigation, water supply, housing and electrification etc. A sum of Rs. 1,74,000 crore was ear-marked for the scheme.(Commission, Evaluation Study on Rural Roads Component of Bharat Nirman, 2010)

Rural roads are the most essential infrastructure for socio-economic uplift of the rural community these create congenial environment for economic prosperity and there by insuring healthy living conditions for the rural in habitants. Provision of rural roads increases mobility of men and materials thus facilities economic growth. (Commission, Evaluation Study on Rural Roads Component of Bharat Nirman, 2010)

The population of rural area even today is depending upon urban area for economic social and political purpose. If the rural area connected with other cities and villages through roads, it gives more opportunity to rural development. Construction of rural roads is a fundamental part of rural development. To promote, and create employment in rural area with concern to agriculture and collaborative business, it is needed to have network of rural roads. (Rote, 2015)

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. Under recommendation of committees report government of India expanded programmes for rural roads construction that are Minimum Needs Programme , National Rural Employment Programme , Rural Landless Employment Guarantee Progamme, Jawahar Rojagar Yojana ,etc.

Pradham Mantri Gram Sadak Yojana

On the recommendations of the National Rural Road Development Committee, Government of India launched a nationwide programme called “Pradham Mantri Gram Sadak Yojana” on 25th December, 2000 in order to provide road connectivity, through good all weather roads to all rural habitation of targeted population.

Government of India started PMGSY to connect rural area in India. The objective of this scheme is to connect villages which are not connected roads yet. The villages will be connected through roads that are does not have roads and they are away from village till 500 miters (in hilly/tribal area 1.5 km.) and more. In order to have roads priority to village that are 1000 and more population and there after 250 and 500 population villages. While considering the population within 500 meters in Trijya (in hilly/tribal are 1.5 km) arrangement are to consider all habitation together while constructing the rural roads. Due to such systems maximum people will benefited is expected. To come about this concept in reality the concept of network introduced. To all peoples minimum one roads one road shall be made available by this network that takes care of their fundamental socio-

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economic needs. It expected in the concept of network that one main road shall be connected by other roads. It is also expected that the habitation will be connected to markets by district, state and national highways. The roads that connect habitation to villages and cities are called as joint roads. Due to such roads habitations will be connected to main business center. (Priya, 2010)

Rural Roads under Bharat Nirman Scheme:

Rural roads is 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.***[2] It was embedded in PMGSY with a wider funding base and extended scope. The programme envisages generating multiplier effect in rural economy by linking production to market and services. (Commission, Evaluation Study on Rural Roads Component of Bharat Nirman, 2010)

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

Objectives of the Study

The main objectives of this research paper are:

1. To analyze the implementation and progress of rural roads under Bharat Nirman Scheme (BNS) and Pradhan Mantri Gram Sadak Yojana (PMGSY) in the Marathwada region.
2. To examine the physical achievements against the set targets of rural roads under Bharat Nirman Phase-I and Phase-II.
3. To assess the socio-economic impact of rural road connectivity on rural communities in Marathwada.
4. To identify challenges faced during the construction and upgradation of rural roads.
5. To provide recommendations for improving rural road infrastructure for enhancing rural development and connectivity.

Research Questions

1. What has been the physical and financial progress of rural roads under Bharat Nirman in Marathwada?
2. How effective has the rural road network been in connecting habitations and promoting socio-economic development?
3. Which districts in Marathwada have shown maximum and minimum progress in rural road connectivity?
4. What challenges are encountered in planning, construction, and upgradation of rural roads?
5. How can the implementation of rural road projects be improved to maximize the benefits for rural communities?

Methodology

Research Design: The study adopts a descriptive and analytical research design to examine the progress and impact of rural roads under Bharat Nirman in Marathwada.

Data Source:

- **Secondary Data:** Government reports, PMGSY website, Ministry of Rural Development annual reports, Planning Commission evaluation studies, Lok Sabha questions, and published literature.

- **Primary Data (Optional/If collected):** Interviews with local officials, Gram Panchayat representatives, and rural inhabitants for qualitative insights.

Data Analysis:

- Quantitative data on targets and achievements of rural road projects will be analyzed using tables, percentages, and graphs.
- Comparative analysis across districts will highlight disparities in implementation.
- Qualitative assessment will evaluate the socio-economic impact of connectivity on rural employment, access to markets, and public services.

Tools and Techniques:

- Statistical analysis for progress evaluation (targets vs achievements).
- GIS/Mapping (if data available) to visualize rural road network coverage.
- Trend analysis for Phase-I and Phase-II of Bharat Nirman Scheme.

Salient Features of Rural Road Component of Bharat Nirman

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 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 where in 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. The detailed project report is based on the detailed survey and investigations and designed with choice of technology. The detailed project report prepared by the executive agencies is being scrutinized by the State technical agencies before it is being accessibility.

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 those 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.

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 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 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 standardize contracts, a separate book of specification and a Standard Data Book have been prepared for rural roads. The State Governments are to prepare the annual Schedule of Rates as per these documents.

10. Standard Bidding Documents: To standardize the road works tendering process, a standard Bidding Document has been provided to the States for adoption and use in all rural road tenders.

11. Computerized Online Management, Monitoring and Accounting System (OMMAS): It is a nation-wise programme being managed and monitored online. 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.(Commission, Evaluation Study on Rural Roads Component of Bharat Nirman, 2010)

Types of Road in India

Figure No- 1

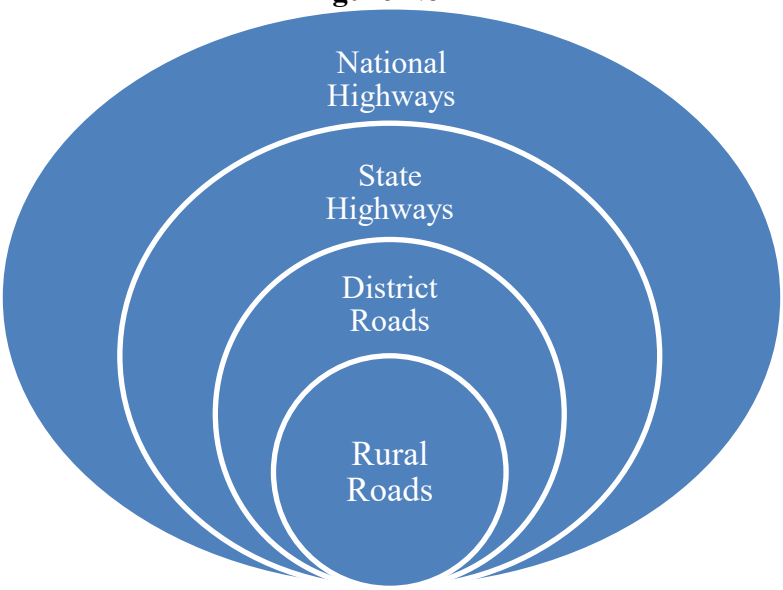


Table No- 1

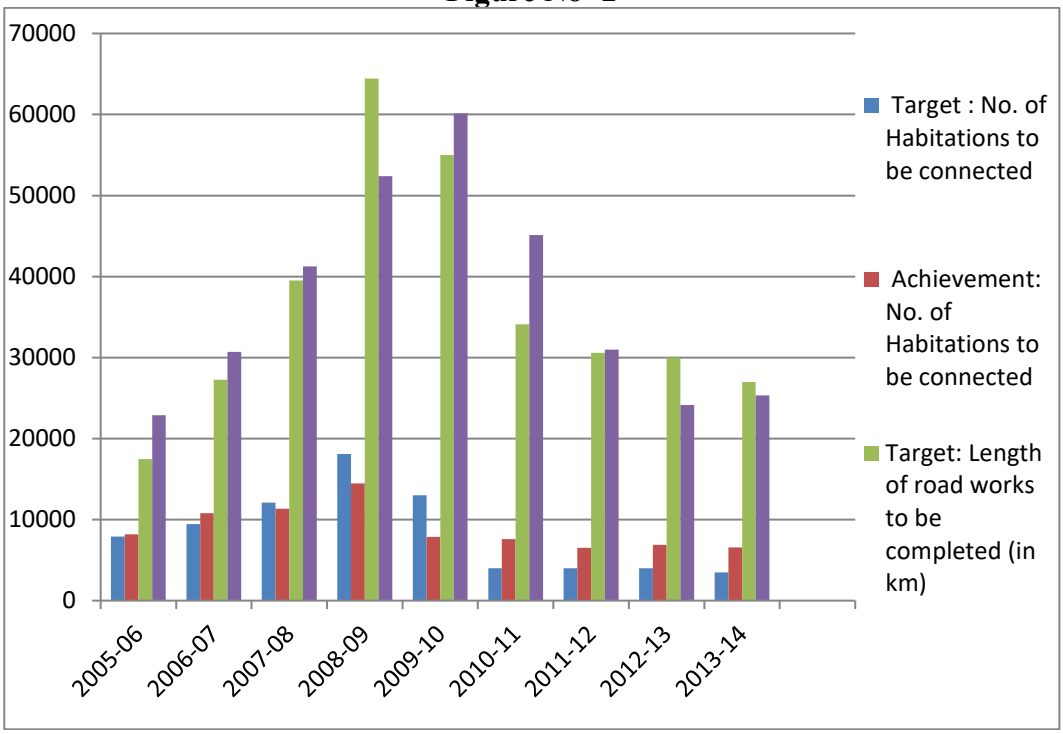
Year-wise details of physical targets and achievements under Bharat Nirman Phase-I and Phase-II

Phase-I				
	Target		**Achievement**	
Year	No. of Habitations to be connected	Length of road works to be completed (in km)	No. of Habitations to be connected	Length of road works to be completed (in km)
2005-06	7895	17454	8202	22891
2006-07	9435	27250	10801	30710
2007-08	12100	39500	11336	41231
2008-09	18100	64440	14475	52405
Total				
Phase-II				
2009-10	13000	55000	7877	60117
2010-11	4000	34090	7584	45109
2011-12	4000	30566	6537	30995
2012-13	4000	30000	6864	24161
2013-14	3500	27000	6560	25316
Total				

Source: Annual Report, MoRD, GOI (Development, 2013-14)

Phase-I and Phase-II

Figure No- 2



In above table no.1 targets and achievement of BNS are stated. In Phase-I of BNS for year 2005-06 to 2008-09. Government of India set targets to connect 47,530 habitations by all-weather roads. In which 45,814 habitations has been connected, it means that the 94% work has been done. The length of their roads targeted to be complete is 148644 km in which the work done is 147237 km. It means that the 99% has been done in phase-I.

In Phase-II oh BNS for the year 2009-10 to 2013-14 target were set to connect 28500 habitations but achievement is more the target set i.e. 35422 habitations has been connected all-whether roads. The target were set 176656 km for length of roads in which 185698 works has been done. It means that in Phase-II more than 100%work has done. Therefore in reference to rural roads with concern to BNS targets are fulfilled.

Table No-2 Number of Habitation Connected under Rural Road component of Barat Nirman Scheme

Physical Progress of Roads Component under Bharat Nirman Programme in Maharashtra				
(Length in Km.)				
State	New Connectivity (KM) Cumulative Achievement (Upto May, 2014)	Up gradation (KM) Cumulative Achievement upto May,2014		
Maharashtra	1764	11030	8588	19618
India	**174949**	**108546**	**143903**	**252448**

Source: Lok Sabha Starred Question no. 3383 dated on 01.08.2014 (3383, 2014)

Table No-3

Selected State-wise Progress (Up gradation: Renewal) of Bharat Nirman Programme (Rural Road Component) in India and Maharashtra				
Target (2005-2012)	Maharashtra **17337.46**		India **194130.69**	
Year	**Target**	**Achievement**	**Target**	**Achievement**
2005-06	4334.4	107.90	11394	3898.10
2006-07	4334.37	3664.00	54669.30	44306.65
2007-08	4334.37	4300.41	59316.28	58145.39
2008-09	6600	6730.00	52720	48668.82
2009-10	1200	3000.15	16000	42437.50
2010-11	922	1472.67	12500	24138.38
2011-12	0	95	12750	8980
Cumulative Achievement	**19370**		**230575**	

Source: Ministry of Rural Development, Govt. of India (13551) and Lok Sabha Unstarred Question No. 2264, dated on 07.12.2011. (Sabha L. L., 2011)
Note: Cumulative achievement is the achievement upto January, 2012. Against the Overall target for 2005-2012.

Table No-4 Total Habitation Covered, New Connectivity and Up gradation

Year		**A'bad**	**Beed**	**Hingoli**	**Nanded**	**Parbhani**	**Latur**	**Jalna**	**Os'bad**
2005-2006	N	2	1	0	0	0	2	0	0
	U	59	115	64	35	64	67	91	53
2006-2007	N	0	0	0	0	0	0	0	0
	U	20	32	14	7	25	36	28	11
2007-2008	N	08	00	00	02	00	00	00	00
	U	00	00	00	27	12	00	00	00
2008-2009	N	05	05	00	00	00	00	01	00
	U	99	79	63	76	00	70	57	45

2009-2010	N	00	00	00	00	00	00	00	00
	U	00	00	00	00	00	00	00	00
2010-2011	N	00	00	00	00	00	00	00	00
	U	00	00	00	00	00	00	00	00
2011-2012	N	00	00	00	00	00	00	00	00
	U	00	00	00	00	00	00	00	00
2012-2013	N	00	00	00	00	00	00	00	00
	U	03	05	00	00	01	00	02	00
2013-14	N	00	00	00	00	00	00	00	00
	U	00	00	00	00	00	00	00	00
Total	**N**	**15**	**16**	**00**	**02**	**00**	**02**	**01**	**00**
	U	**181**	**231**	**141**	**145**	**102**	**173**	**178**	**98**

Source: www.pmgsy.com
N= New Connectivity and U= Up-gradation

In given table no. 4 the total habitation covered are shown in two factor, new connectivity and up gradation . For all district of Marathwada from the year 2005-06 to 2013-14 respectively. If we consider Marathwada is a whole in Beed district largest upgradation and new connectivity are given. While the lowest connectivity and lowest up gradation for Osmanabad for total habitation covered.

Conclusion

The study concludes that Bharat Nirman Scheme has significantly contributed to rural development in Marathwada by enhancing connectivity through all-weather roads. In Phase-I (2005–2009), approximately 94% of targeted habitations were connected, and in Phase-II (2009–2014), the achievements exceeded targets, connecting more than 35,000 habitations. Improved rural road connectivity has facilitated better mobility, access to markets, health, education, and employment opportunities. District-wise analysis indicates that Beed district showed maximum progress, while Osmanabad lagged behind. Overall, the scheme has successfully addressed rural connectivity, though challenges in construction, maintenance, and quality control remain.

Suggestions / Recommendations:

1. Strengthen Monitoring Mechanism: Enhance the efficiency of three-tier quality control (PIU, SQM, NQM) to ensure timely and durable construction.
2. Focus on Lagging Districts: Special attention should be given to districts like Osmanabad with low connectivity and upgradation progress.
3. Community Participation: Encourage active participation of Gram Panchayats and local stakeholders in planning and monitoring roads to ensure relevance and utilization.
4. Maintenance and Sustainability: Establish regular maintenance plans for roads to prevent deterioration and maximize lifespan.
5. Integrated Network Approach: Ensure that rural roads are well integrated with district, state, and national highways to optimize socio-economic benefits.
6. Capacity Building: Provide training to state and district agencies on modern road construction techniques and project management.
7. Leverage Technology: Expand online monitoring systems like OMMAS for real-time tracking of road projects and fund utilization.
8. Socio-Economic Impact Assessment: Conduct periodic evaluations to measure benefits in terms of income, employment, market access, and public services.

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