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Pradhan Mantri Gram Sadak Yojana: A Pathway to Rural Development for Viksit Bharat 2047

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Abstract

Viksit Bharat 2047 wants to create a society that has a prosperous rural infrastructure. Improved access to roads throughout rural India's villages will create better opportunities for economic growth and support agricultural development. To help enhance the development of infrastructure for rural citizens, the Government of India has established the Pradhan Mantri Gram Sadak Yojana (PMGSY), which focuses on the development of rural roads to connect individual villages to a greater network of infrastructure, providing opportunities for increased trade, improved access to education and health facilities, and social-economic enhancement. This article describes the three phases of PMGSY, along with discussing how it has impacted the socio-economic fabric of the region it will be constructing and enhancing its long-term impact will continue to be felt. It explores various challenges and emphasizes the need for efficient project management. By analysing data sourced from various secondary references, the article offers insights into the program's achievements and highlights areas necessitating further attention to secure enduring rural connectivity and development within the framework of PMGSY.

Keywords: Viksit Bharat, Rural Road, PPPs & PMGSY

Introduction

In 2023, Prime Minister Narendra Modi introduced the vision of 2047 initiative, referred to as Viksit Bharat 2047. Successful Viksit Bharat cannot be imagined without developing rural areas because India is a rural-based economy with approximately 74% of its population living in its villages. The number of people living in rural areas increases significantly increasing the need for rural infrastructure development increases for the Viksit Bharat vision to be successfully achieved. As globally observed, the rural economy is primarily based on the agriculture sector; therefore, most developing economies widely recognise the importance of infrastructure for the advancement of agriculture. Development of

infrastructure is crucial, especially in rural areas, as they affect increases in productivity and poverty reduction (Manjunath & Kannan, 2015). The contribution of rural roads to the advancement of provinces in developing countries such as India is one of their most important factors when it comes to rural areas because much of the population in developing countries lives in rural areas. A rural road in India functions as a link road connecting a village/hamlet to a main road so that rural residents can transport their goods to the market and also connect them to other social and economic services. The rural road system of a country is a source of great wealth for the country, and an important tool for stimulating both economic development and social inclusion (Kumar & Antahal C., 2021). Rural road development increases

the access of rural families to all types of monetary and social services, thereby increasing both the agricultural productivity, non-agricultural employment, and non-rural productivity of the rural area, which leads to new growth and increased real wages for rural families (Kale & Pimplikar, 2017). By functioning as an infrastructure multiplier as well as reducing poverty, rural roads serve multiple purposes. The Indian road network is approximately 66.71 lakh km long and is the second-largest road network in the world next to North America (USA). A large proportion of the overall Indian road network is completed by the rural road systems with approximately 45,22,228 km, which represent approximately 71.4% of the entire road network in India.

By assessing the above-mentioned statistics and also taking into account the importance of rural roads in India, on December 25, 2000, the Government of India launched the Pradhan Mantri Gram Sadak Yojana (PMGSY) under the then Prime Minister Atal Bihari Vajpayee in order to provide all weather connectivity to those habitations that have been identified as unconnected. This Yojana represents a major infrastructure development program aimed at enhancing rural roads networks within the nation. Yojana encompassed a high level of quality in the construction of roads, followed by continuous post-construction maintenance of the road asset (PMGSY - III Guidelines, 2019). The PMGSY began operation on 1 October 2000. A survey at the beginning of this program estimated there were 330,000 'unconnected' from the 825,000 total habitations (villages) requiring an all-weather road connection. A high proportion of these poorly connected habitations are located in ten states: Assam, Chhattisgarh, Bihar, Jharkhand, Himachal Pradesh, Orissa, Madhya Pradesh, Rajasthan, West Bengal and Uttar Pradesh (World Bank, 2017).

The PMGSY's primary objective is to provide connectivity to eligible (unconnected) habitations of rural communities (with a population of at least 500 people in plain areas), through the development of all-weather roads (including culverts and cross drainage works) that will be available for use year-round. For identified 'hill states' (North East, Sikkim, Himachal Pradesh and Jammu & Kashmir), desert areas (identified through the Desert Development Programme), tribal areas (Scheduled V areas) and for some identified tribal/backward districts (identified through the Ministry of Home Affairs and Planning Commission) - the PMGSY aims to connect eligible (unconnected) habitations with a population of at least 250 people (National Rural Roads Development Agency, 2012).

PMGSY is predominantly financed by the central government, with the central portion ranging from 60

to 90%, contingent upon the state's designation as either a general category or special category state (e.g., North-Eastern states, Jammu & Kashmir, Himachal Pradesh). Once a road is built, the state governments are in charge of maintaining it and covering the remaining portion. Habitations are selected based on a detailed survey and prioritization process, which considers factors such as population size, distance from existing roads, and socio-economic indicators.

In 2019, the third phase of PMGSY was launched. It aims to increase the connectivity between villages and rural and agricultural markets which ensures effective movement of farm produce and perishable commodities. It intends to provide last-mile connectivity to these essential facilities by connecting villages to hospitals and higher secondary schools. After the 2nd & 3rd phases of the PMGSY, the rural road connectivity was strengthened (Tiwari & Verma, 2022).

In order to connect 25,000 villages with all-weather roads, Finance Minister Nirmala Sitharaman announced Phase IV of the PMGSY and allotted Rs 19,000 crore for the fiscal year 2024-2025.

Salient Features of PMGSY

PMGSY 1	PMGSY 2	PMGSY 3
Started in 2000	Started in May 2013	Started in December 2019
To improve the connectivity and eradicate the poverty in rural areas	Connecting Rural roads to nearby markets	Connecting villages to agricultural markets, higher secondary schools, and hospitals.
Fully constructed by Union Government	Provision of areas affected by left Wing Extremism	60% Union Government + 40% State Government
	75% Union Government + 25% State Government	In case of special states, same as PMGSY 2
	90% Union Government + 10% State Government in the case of special states (hilly, tribal states)	Fully constructed by Union Government

Progress of PMGSY

Since its inception, PMGSY has made remarkable progress in improving rural connectivity across India. PMGSY has already achieved over 90% of its original target. As of 2024, the program has connected over 1.8 lakh habitations with more than 7.66 lakh kilometres of roads constructed out of 810281 kms (94% completed) and 68541 roads upgraded.¹ Figure 1 illustrates the percentage of completed road sections across different phases of the PMGSY program. Phases 1 and 2 achieved 99% of the targeted completion, whereas Phases 3 and RCPLWEA reached only 72% and 76%, respectively. Fig. 2 shows the Line Graph of the development progress in PMGSY for

1 <https://omms.nic.in/>

phase 1 to phase 3 including RCPLWEA. This line graph showed that this Yojana got steepness in progress from 2000-2009, slowdown in progress and again achieved steepness from 2015-2024. In Fig 3, Yojana connected 95 to 100% habitations with PMGSY during all phases of this Yojana. Larger states such as Uttar Pradesh, Bihar Maharashtra, etc completed 99 to 100%. The Progress of this Yojana was achieved with 325,558.05 Crores of expenditure.



Fig.1

Source: Government of India²

Line Graph showing the development process in PMGSY

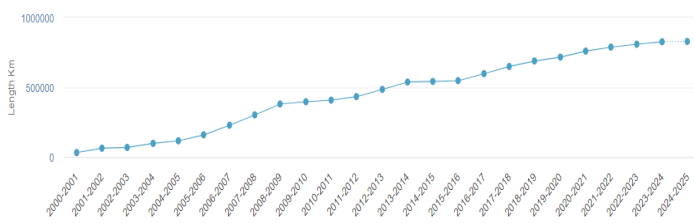


Fig. 2

Source: Government of India³

² <https://omms.nic.in/dbweb>

³ <https://omms.nic.in/dbweb>

Connected Habitations Percentage (PMGSY-I PMGSY-II PMGSY-III RCPLWEA)

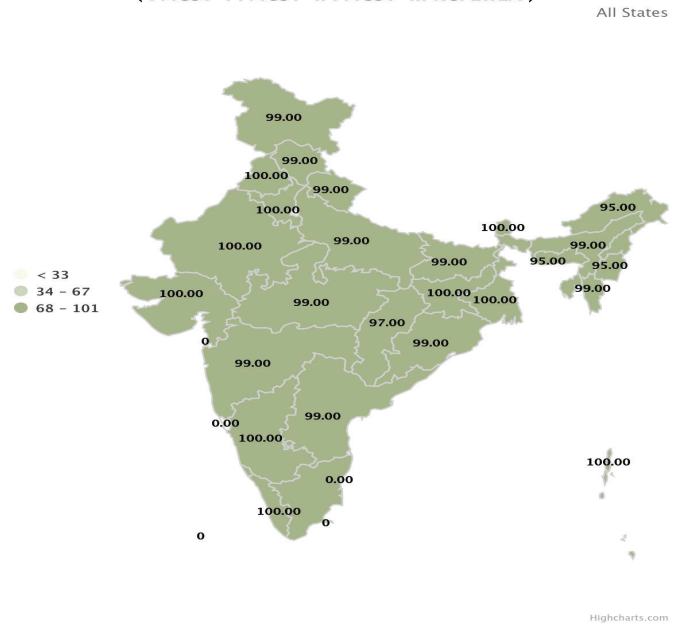


Fig. 3

Source: Government of India⁴

For the past 15 years, the government has prioritized the development of sustainable and eco-friendly roads. In 2013, it introduced New Technology Guidelines aimed at incorporating local, non-conventional, and environmentally friendly methods in road construction. Essentially, these new technologies are employed under the PMGSY program:

- Waste Plastic (26,700 + km constructed)
- Cold Mix Technology (17,300 + km constructed)
- Cement-treated sub-base/base
- Nanotechnology
- Jute, Coir, Cement/lime stabilization
- Full Depth Reclamation (FDR) technology
- Cell filled concrete

Under this New Technology, 1,11,358 km has been sanctioned out of which 70,769 km has been completed (Kale & Pimplikar, 2017)

Impacts and challenges of PMGSY

PMGSY showed a positive impact and made a significant multiplier effect chain to generate economic opportunities and capital accumulation. Below is the sector where PMGSY impacted positively.

⁴ <https://omms.nic.in/dbweb>

Results Chain of Rural Road Intervention

Community Involvement

Involving local communities in the planning and implementation of PMGSY projects has led to more context-specific solutions and increased local ownership. Community involvement has also helped in resolving land acquisition issues and ensuring better maintenance of roads. Conducting social audits of PMGSY projects has improved transparency and accountability, allowing local communities to voice their concerns and participate in monitoring the quality of construction.

Environmental and Sustainable Practices

The construction of rural roads, especially in ecologically sensitive areas, has raised concerns about deforestation, soil erosion, and disruption of local ecosystems. In response to these environmental concerns, several states have adopted eco-friendly construction methods. These include using locally available materials, incorporating green technologies, and minimizing environmental disruption. Extreme weather events are happening more often and as a result, there is a greater focus on building climate-resilient roads that can withstand flooding, landslides and other climate-related challenges. To tackle this problem, the PMGSY has implemented New Technology Guidelines in 2013 that encourage the use of local/non-conventional/green technologies when constructing roads.

Economic Impact

This Yojana has provided a major economic benefit, both qualitatively and quantitatively. Improved road connectivity has made it easier for agricultural products to be transported from farms to markets, easier for farmers to learn about mandis, cuts down travel time by 56.27% to mandis, and has positively influenced crop choice and cultivation patterns (Ministry of Rural Development, 2015). All of these factors have resulted in lower transportation costs and post-harvest losses, leading to increased incomes for farmers and improved food security. According to the World Bank, the rate of primary employment in the non-farm sector rose by approximately 12%, with the share of people working outside their villages increasing by 8%. Additionally, women's involvement in the rural workforce saw a notable rise. Furthermore, this shift to non-farm sectors may result in increased land availability per farm worker, potentially boosting agricultural productivity. Increased government visitation to rural areas has enabled better implementation of several government programs and

scheme. Access to social infrastructure has improved for these newly connected habitated due to PMGSY, as they now have better access to banking services, postal services, health care services, veterinary services, public transport, and local markets (Kale & Pimplikar, 2023).

Migration Patterns

The improved infrastructure resulting from PMGSY influences migration patterns in rural India. With improved connectivity and therefore income generating opportunities in rural areas. Less migration from rural to urban areas will occur as a result of this improved connectivity. Residents are less compelled to move to urban centres in search of employment, thereby alleviating the pressure on urban infrastructure and resources. Conversely, improved roads also enable seasonal migration, where rural inhabitants can temporarily move to cities for work without permanently relocating.

Social Impact

PMGSY has significantly improved the Pupil-Teacher Ratio (PTR) and increased school enrolment by linking outlying communities to neighbouring schools, especially for girls. Rural communities have developed considerably overall as a result of this increased access to education.

Impact on Poverty Reduction

PMGSY has made a positive impact on rural poverty by increasing access to markets, services and job opportunities. As a result of improved connectivity, many houses in these areas have transitioned to semi-pucca structures, with a discernible rise in the number of pucca houses. Additionally, a significant number of households have acquired LPG connections, which has contributed to improvement in health outcomes for rural women. The increased employment opportunities have boosted income levels among rural dwellers, helping lower the poverty (Kumar & Antahal C., 2018). The Indian government claims that people's socioeconomic status and quality of life have greatly improved from the pre-road era (Ministry of Rural Development, 2015).

Challenges

Geographical Challenges

In states like Uttarakhand and Himachal Pradesh, the hilly and forested terrain presents significant challenges for road construction. Landslides, soil erosion, and the need for extensive earthworks make the construction process both time-consuming and costly. Similarly, remote areas in the North-East and Jammu & Kashmir often encounter difficulties in sourcing materials and labour, which frequently leads to delays in project completion. The geographic and logistical challenges

5 <https://blogs.worldbank.org/en/transport/20-years-boosting-economic-opportunities-India-World-Bank-support-to-world-largest-rural-road-program>

associated with these locations make it much more difficult and expensive to build infrastructure in these areas.

Administrative and Coordination Issues

Delays in land acquisition have been one of the biggest barriers to the implementation of PMGSY as unclear land titles and landowners resisting have led to protracted legal processes and therefore extended delays in project delivery timeframes. Moreover, the smooth execution of PMGSY needs close collaboration among various government agencies like the Ministry of Rural Development; state governments and Local Authorities but bureaucratic delays, lack of cooperation between departments has caused delays in the completion of projects. The effect of these delays has been twofold; Firstly, the construction of roads is delayed and secondly, costs of projects have increased due to the use of the additional resources.

Quality Assurance

Constant challenge under PMGSY. Examples of substandard construction have occurred in various states, resulting in roads that have prematurely deteriorated. Once roads are completed, the responsibility for maintaining these roads falls under state governments' jurisdiction; however, inadequate maintenance practices have resulted in the rapid deterioration of many roads and therefore, the long-term sustainability of PMGSY. This ineffective maintenance not only affects the durability of infrastructure but also significantly reduces the overall impact of PMGSY on enhancing connectivity in rural areas.

Suggestions

Technological Innovations by Government

Technological innovations made by government agencies, including GIS and remote sensing technologies, have improved the planning and monitoring of the PMGSY program. As a result, more than 07 Lakh7 geo-tagged assets (facilities) have been established under PMGSY, which is assisting with the accurate mapping of habitations, optimising road alignments and enhancing quality assurance during the construction phase.

Public-Private Partnerships (PPPs)

In certain states, the introduction of Public-Private Partnerships (PPPs) for the maintenance of rural roads has resulted in improvements in quality and sustainability. The blending of efficiency of the private sector with the oversight of the public sector are key attributes of these project delivery mechanisms..

Strengthening Monitoring Mechanisms

A vital aspect of ensuring quality road construction within PMGSY is to enhance monitoring mechanisms. This can be accomplished by conducting continuous third-party inspections, enforcing rigorous compliance with quality standards and increasing the deployment of technology for real-time monitoring.

Enhancing Coordination

By linking programs such as PMGSY and other rural development schemes (Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), National Rural Livelihoods Mission (NRLM), Pradhan Mantri Awas Yojana (PMAY) and Swachh Bharat Mission), the overall outcomes of the respective programs can be maximised by creating synergies and reducing duplication

Future Prospects

The continued growth and future direction of PMGSY is closely linked to the broader objectives of rural development in India through inclusive growth. As PMGSY embarks upon its next phase in the development of Viksit Bharat. The ongoing strategic plan for PMGSY should focus on an objective of providing every rural community with good, reliable and durable (all-weather) road access by the year 2040. At the same time, maintaining and preserving current road infrastructure will be very important to ensure a successful long-term. Rural roads make a valuable contribution to reducing rural poverty, but cannot do this on their own. For a successful reduction of rural poverty, rural road infrastructure should be complemented with other structural reforms and social welfare programs. This should include providing increased access to quality education, health care, financial services and employment opportunities to help create a comprehensive approach to rural development (Kale & Pimplikar, 2023; Manjunath & Kannan, 2015; Tiwari & Verma, 2022).

Conclusion:

PMGSY represents a major step forward in closing the rural infrastructure gap in India. It will continue to provide large numbers of rural residents with the necessary infrastructure and improved living conditions. This is evident in the huge amount of progress that the program has made by connecting distance (remote) rural communities with critical services and improving the ability of rural residents to earn a living. To achieve the dream of Viksit Bharat 2047, more focus should be given to rural development and rural infrastructure because "the true spirit of India is found in the villages of

India.” Supporting these parts of the country will serve as a foundation of the nation as a whole. To maintain long-term sustainability and impact of this initiative: one needs also address the following challenges. While entering into phase two of PMGSY, there should be a sustained focus on innovation; sustainability; and inclusive growth. When PMGSY is able to address the above challenges by improving institutional capacity, improving transparency, encouraging more community participation, and committing to sustainability; they will be able to continue transforming rural India through creating a more inclusive and equitable environment.

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