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PMGSY - Rural Road Infrastructure and Sustainable Rural Development in India

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Abstract

The economy of India is predominantly agrarian in nature. Regardless of prompt growth in other sectors, agriculture and allied sector is still the major sector contributing towards the Gross Domestic Production (GDP). According to the estimates, released by the Ministry of Statistics programme Implimentation (MoSPI), the GVA of agriculture and allied sectors in 2021-22 was 19%. And agriculture sector share in the country,s work force at 45.5 % in 2021-22 (NSSO report for 2021-22). Hence For the development of agriculture, the timely availability of inputs to the farm fields and timely marketing of produce especially perishable products are very much required which are only possible through the improved connectivity. Therefore, transport network is one of the most vital of all physical infrastructures. While the demand for expansion of transport generally derives from the needs of the other sectors of the economy, to an extent, the transport sector also acts as a leading factor in stimulating socio-economic development. From the rural perspective, among the various modes of transportation road transportation is the most important transport infrastructure in the country. Road infrastructure provides the basic transport infrastructure in rural areas for bringing the majority of the people who are living in far-off villages into the mainstream of the economy by connecting them with rest of the country. For these reason Government of India has been putting thrust on building rural infrastructure in every Five Year Plans.

In pursuance of the nationally significant cause of providing complete rural road connectivity through all weather roads, to set villages free from the handicap of isolation and deprivation of accessibility, Government of India set up the National Rural Roads Development Committee (NRRDC) in January, 2000 chaired by Shri Nitin Gadkari. This committee after dwelling on the effects of deprivation of rural accessibility and keeping in view expected benefits from rural connectivity recommended a special intervention, the Pradhan Mantri Gram Sadak Yojana (PMGSY) which was launched on 25th December, 2000 as a 100% Centrally assisted scheme. The focus of the programme is to construct good quality all-weather roads for new connectivity and upgradation of existing roads. For the first time the focus is directly on the rural connectivity under dedicated road fund, and the 50% of the cess amount collected on high speed diesel has been allocated for this programme. In earlier programmes, the village with a defined population was the target for providing connectivity, while the PMGSY envisage 'habitation' as the unit, to reach out to more settlements and more people with accessibility.

Upgradation of selected rural roads to provide farm to market connectivity is the secondary objective of PMGSY Programme. In earlier programmes, the village with a defined population was the target for providing connectivity, while PMGSY envisage the habitation as the unit, to reach out to more settlements and more people with rural accessibility.

Key words: Rural Roads, Connectivity, Diversification, Marketing. Urbanisation.

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I. Introduction:

The agricultural sector has been one of the most important components of Indian Economy. Agriculture continues to be a main stay of life for majority of the population. It contributes around 19 per cent (economic survey of India 2021-22) of the GDP; About 65% people are living in rural areas and are still dependent on Agriculture. About 43% of India's geographical area is used for agricultural activity and employs 45.5 per cent of the workforce in the country. Since the responsibility of providing infrastructure is with the state which aims at rapid growth of agricultural production for attaining other kinds of developmental goals such as poverty alleviation, relieving unemployment, attaining food security and promote industrial development etc,. The agricultural sector in our country has flourished over the years due to government's constant thrust on increasing agricultural production. Still the benefits are not percolating down to the farming community. Indian agriculture is characterized by lack of proper infrastructure facilities. As far as nature of infrastructure is concerned, there are different kinds of infrastructure such as economic infrastructure, social infrastructure, financial

infrastructure, technological infrastructure, agricultural infrastructure, etc., defined in broader terms. Among all kinds of infrastructure mentioned above, agricultural infrastructure plays an important role especially in a developing country context where a larger percentage of poorer section of the society depends on this sector for subsistence. The agriculture sector continues to be the single largest occupation as it still provides livelihood to 53percent (Economic survey 2010-11) of the population. The enhancing infrastructure warrants a closer relationship between the levels of agricultural development. This assumes importance because, the agricultural sector plays a dominant role in alleviating poverty and the overall growth of the agricultural sector and its components such as growth of agricultural employment, income, output, etc depend largely on the level of investment made in infrastructure. In other words, level of infrastructure in agricultural sector is one of the major factors that could explain the agricultural growth. This being our major aim here is to analyze the role of infrastructure in promoting agricultural.

Among agricultural infrastructure road infrastructure plays a very significant role in accelerating agricultural production. Rural Roads Connectivity is one of the key components for rural development, as it promotes access to economic and social services, generating increased agricultural income and productive employment. About 600 million people of India live in nearly 6 lakh villages scattered all over the country. Access roads provide the means to bring the rural population on to the main stream. A good road network accelerates efficient delivery of farm inputs, reduce transport cost and enhance special agricultural production and distribution. A good network of roads will expand the distribution of agricultural goods as well as open up additional opportunities for agricultural trade (Inoni 2009). Improved infrastructure leads to expansion of markets, economies of scale and improvement in factor market operations. It also opens up the rural economy to greater competition from outside. This may take the form of cheaper products from lower-cost sources of supply or new or improved products that may displace some locally produced items. The majority of studies recognize that infrastructure investment has a strong impact on rural incomes and especially on small holders. There was a direct relationship between increase in acreage of export crop cultivation and the standard of roads and distance from the main commercial centers. There is enhanced entrepreneurship activity, sharp decline in freight and passenger charges and improved services as a result of investment in rural roads (Bonney, 1964).Road are always recognized as an infrastructure and arteries of the nation. Rural infrastructure assumes great importance in India because of the country's predominantly rural nature.

Rural roads were not only providing connectivity to rural area but also affecting change in cropping pattern due to access to markets, increasing productivity by facilitating availability of inputs like fertilizer, seeds and pesticides, realization of better prices to the farmers for agriculture and allied products like milk, improving attendance in schools and above all opening new employment opportunities in non-farm and service sectors (Sangwan S S, 2010).

The rural road in India forms a substantial portion of the Indian road network. These roads are in poor shape, affecting the rural population's quality of life and Indian farmer's ability to transfer produce to market post-harvest. Over 30 percent of Indian farmer's harvest spoils post-harvest because of the poor infrastructure. Many rural roads are of poor quality, potholed, and unable to withstand the loads of heavy farm equipment. These roads are also far from all season, the total length of rural road is of the order of 2.7 million kilometers in 2001 and which is 4.5 million kilometers in 2019. Of which 70% of Indian rural roads are paved.

The condition of Karnataka does not different from India. Total road length in Karnataka comprises of national highways, state highways, important district roads, other districts roads, Z P roads and village roads. The road network in Karnataka, As on 31-03-2020 comprises of 7589 kilometer of national highways 19470 kilometers of state highways, 49520 kilometers of major district roads, 8366 kilometers of municipal roads and 148412 kilometres of village roads (MIS 2020). On an average, about 80 kilometers of road exists per every 100sq Km of geographical area. However, the distribution of the roads between the districts, and within the districts is not at all balanced. The national standard envisages a road network of about 100 km per 100sq km of area. Thus, the state as a whole is lagging behind the suggested norms.

In pursuance of the nationally significant cause of providing complete rural road connectivity through all weather roads, to set villages free from the handicap of isolation and deprivation of accessibility, Government of India set up the National Rural Roads Development Committee (NRRDC) in January, 2000 chaired by Shri Nitin Gadkari. This committee after dwelling on the effects of deprivation of rural accessibility and keeping in view expected benefits from rural connectivity recommended a special intervention, the Pradhan Mantri Gram Sadak Yojana (PMGSY) which was launched on 25th December, 2000 as a 100% centrally assisted scheme. The focus of the programme is to construct good quality all-weather roads for new connectivity and upgradation of existing roads. For the first time the focus is directly on the rural connectivity under dedicated road fund, and the 50% of the cess amount collected on high speed diesel has been allocated for this programme. In earlier programmes, the village with a defined population was the target for providing connectivity, while the PMGSY envisage 'habitation' as the unit, to reach out to more settlements and more people with accessibility. Upgradation of selected rural roads to provide farm to market connectivity is the

secondary objective of PMGSY Programme. In earlier programmes, the village with a defined population was the target for providing connectivity, while PMGSY envisage the habitation as the unit, to reach out to more settlements and more people with rural accessibility.

RESEARCH OBJECTIVES

Main objectives of the study are;

1. To study the Tasks and achievement of PMGSY
3. To study the role of Bharat Nirman Programme in Rural roads and agriculture development

II. METHODOLOGY

Research Design – On the basis of fundamental Objectives of research our study is a type of Descriptive Research :- Descriptive research also known as statistical research Method of data collection – Secondary Data:- Large amount of secondary data is available in the forms of articles, manuals and previously conducted researchers on the similar topic. Also the data the gathered will help in identifying key parameters to examine through further exploration and thus will help in defining the Objectives.

PRADHAN MANTRI GRAM SADAK YOJANA (PMGSY)

Rural connectivity is the key component of rural development and poverty alleviation in India. Rural roads provide accessibility for the rural habitations to market and other facility centres. In pursuance of the nationally significant cause of providing complete rural road connectivity through all weather roads, to set villages free from the handicap of isolation and deprivation of accessibility, In order to give a boost to rural connectivity a rural roads programme Government of India set up the National Rural Roads Development Committee (NRRDC) in January, 2000 chaired by Shri Nitin Gadkari. This committee after dwelling on the effects of deprivation of rural accessibility and keeping in view expected benefits from rural connectivity recommended a special intervention, the Pradhan Mantri Gram Sadak Yojana (PMGSY) which was launched on 25th December, 2000 as a 100% Centrally assisted scheme to provide all weather connectivity to over 1.6 lakh eligible unconnected habitations at an estimated expenditure of Rs. 60,000 crores,

Strategy and Objectives

The focus of the programme is to construct good quality all-weather roads for new connectivity and upgradation of existing roads. For the first time the focus is directly on the rural connectivity under dedicated road fund, and the 50% of the cess amount collected on high speed diesel has been allocated for this programme. In earlier programmes, the village with a defined population was the target for providing connectivity, while the PMGSY envisage '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 plain and in respect of hilly, desert and tribal areas the habitations with 250 and above population is targeted. It was planned to provide connectivity in a phased manner. In the general order of priority for connectivity, the primary objective of PMGSY was to provide all weather road connectivity to:

- All habitations with over 1000 population by 2003.
- All habitations of 500 to 1000 population by 2007 (end of the 10th FYP)
- All habitations with population above 250 (in the case of hill states, deserts and tribal areas) by 2007.

Upgradation of selected rural roads to provide farm to market connectivity is the secondary objective of PMGSY Programme. In earlier programmes, the village with a defined population was the target for providing connectivity, while PMGSY envisage the habitation as the unit, to reach out to more settlements and more people with rural accessibility. After launching PMGSY, States were asked to prepare District Rural Roads Plan (DRRPs), with a complete inventory of existing roads and list out proposed roads for providing connectivity to unconnected habitations of the defined population level. As per data provided by States, after preparing the DRRP and identifying the Core Network to ensure single all weather connectivity to targeted habitations and continuity up to market centers, State wise requirements for rural roads for new connectivity can be arrived at.

ROLE OF BHARAT NIRMAN PROGRAMME IN RURAL ROADS

Bharat Nirman

The Government of India in recognition of the role played by infrastructure in poverty removal has taken up massive programmes for construction of rural infrastructure under different programmes in the past. The government launched a time-bound plan under Bharat Nirman in 2005 for implementation during the four-year period, 2005–09. The first half of the programme was in the Tenth Plan period and the second half coincides with the first two years of the Eleventh Plan period (2007–12). The six components included under the programme are irrigation, drinking water, electrification, roads, housing, and rural telephony. The investment proposed to be made is of the order of Rs 174000 crore during the four-year period. The

objective of the Bharat Nirman Programme is to impart a sense of urgency to create rural infrastructure by setting time-bound goals under various schemes which form a part of the Bharat Nirman Programme. The Programme imposes a responsibility on the State to create these facilities in a transparent and accountable manner.

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Rural roads are the most essential infrastructure for socio-economic uplift of the rural community. These create a favorable environment for economic prosperity and ensuring healthy living conditions for the rural habitants. Provision of rural roads increases mobility and facilitates economic growth. Several studies have already established that there is a strong relationship between rural roads and socioeconomic development. Rural Road is one of the six components of Bharat Nirman, which 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 2012. It was embedded in the PMGSY with a wider funding base and extended scope. Bharat Nirman envisages a massive scaling up of the programme in terms of habitation connectivity coverage, construction targets and financial investment. The programme envisages generation of multiplier effect in the rural economy by linking sites of production to markets and services. To achieve the time bound targets of Bharat Nirman the programme envisaged to provide connectivity to 63,940 habitations, till the year 2012. Up to March 2012, projects to connect 58,387 were sanctioned. Out of this, 44,089 habitations were connected by constructing 1,41,095 kms of new roads. Systematic District Rural roads plans were prepared listing out the completer network of all roads in the district i.e. village Roads, Major District Roads, State Roads and National Highways and construction and allocation of resources were prioritized . To ensure quality control measures were followed backed by independent quality checks and measurements. The inbuilt clause of five years maintenance within the construction contract has helped in maintenance of the newly created assets. Up to June 2011, as many as 40,712 habitations were provided connectivity under this programme. The achievement in case of new connectivity and upgradation of roads infrastructure were 68.5 and 90.7 percent respectively as in June 2011.

The details of roads completed in the last five years and current year under various interventions/verticals of PMGSY are as under:

Year	No. of roads	Road length (in km)
2017-18	9,260	48,670
2018-19	8,586	48,093
2019-20	8,678	27,305
2020-21	5,581	36,687
2021-22	6,539	41,971
2022-23 (as on 14.07.2022)	1,883	7,513
Total	**40,527**	**2,10,239**

Sourse: PMGSY – Online Management, Monitoring and Accounting System

An evaluation by the Development Monitoring and Evaluation Office (DMEO) of NITI Aayog in 2020 of Centrally Sponsored Schemes in Rural Development Sector, including Pradhan Mantri Gram Sadak Yojana was carried out. The following are the main findings of this study:
(i) It was found that the scheme is well aligned with India's international goals and is seen to contribute to SDGs (Sustainable Development Goals) 2 & 9 as it addresses the issues of poverty, hunger and infrastructure for growth.
(ii) Roads constructed under PMGSY have been observed to create positive impacts at both at level of the household and the community.
(iii)The roads have been observed to increase access to market and livelihood opportunities, health and education facilities.
(iv) PMGSY is noted to build the foundations for long-lasting poverty reduction in rural India. Improved rural connectivity provides a long-term and sustained boost in the living standards of rural populations as it allows households to accumulate wealth and human capital.

An impact evaluation study was conducted by World Bank, 2018, the main findings of which are as follows:-

i. The crops taken to the markets for sale from PMGSY roads increased by 8%.
ii. Rate of primary employment in non-farm sector increased by about 13%
iii. Share of people with primary employment outside their habitation increased by 8%
iv. Share of babies delivered at home decreased by 30% in connected habitations

Habitations connected and length completed under PMGSY

Sl.No	States	Habitations Connected Upto 9TH March, 2023	Length Completed Upto 15.12.2022(Km)
1	Andaman &Nikobar Islands	**6**	50
2	Andra Pradesh	1,224	16880
3	Arunachala Pradesh	594	13112
4	Assam	13,707	30768
5	Bihar	29,783	56580
6	Chhattisgarh	9,587	41902

7	Gujarat	3,048	14370
8	Haryana	1	7477
9	Himachal Pradesh	2,510	20728
10	Jammu &Kashmir	2,096	17782
11	Jharkhand	9,541	27642
12	Karnataka	296	22550
13	Kerala	402	3834
14	Madhya Pradesh	17,517	86742
15	Maharashtra	1,340	27039
16	Manipur	616	10506
17	Meghalaya	489	4040
18	Mizoram	231	4241
19	Nagaland	98	4158
20	Odisha	15,304	66011
21	Punjab	389	8863
22	Rajasthan	15,976	72760
23	Sikkim	346	4577
24	Tamilnadu	1,985	22123
25	Tripura	1,965	4783
26	Uttarpradesh	11,748	63847
27	Uttrakhand	1,834	19143
28	West Bengal	13,107	36441
29	Telangana	595	12094
30	Ladak	64	1013
	Grand Total	**1,56,399**	**722225**

Sourse: PMGSY – Online Management, Monitoring and Accounting System

ECONOMIC IMPORTANCE OF ROADS

The development of roads affects agriculture directly by enlarging the areas under cultivation. There is a close relation between road development and increased agricultural products. Easy transport of manures, good seeds and better agricultural equipment, pesticides is made possible in time due to easy road transport. Better roads neutralise locational disadvantages in farming. Road improvement also leads to changes in the pattern of agricultural production with the aid of diversion of cultivation from staple crops to cash crops. Inadequacy of good roads in rural areas compels the farmers to dispose of his produce to the village money lender at cheap prices. Good and paved roads would open up the urban markets to the farmers which would facilitate marketing of his product at better prices. Moreover, bad roads are responsible for higher cost by transportation which increases the cost of marketing. A better roads also aids agriculture indirectly by breaking up the isolation of

villages, spreading education and creating a general sense of awakening. The rural industries like dairy farming. Bee-keeping. Poultry farming, sericulture. etc.. can be developed as subsidiary industries to supplement their income in their spare time. Development of cottage and small scale industries becomes possible in rural areas due to the close road contact with their urban markets and the availability of raw materials at cheap prices. The important role played by the roads is very much felt during the days of famines. For relieving unemployment and promoting economic activity, road development is an important item of the State Governments. It has been observed regarding some of the Indian famines that the food scarcity in an area was not due to total deficiency. And also, road development would facilitate flow of food from surplus to deficit areas and also equalize the prices in different markets.

RURAL ROADS AND CHANGE IN AGRICULTURAL PRODUCTION

All-weather good roads would promote the production of agricultural commodities. Its impact is likely to be relatively greater in the production of soft and highly perishable agricultural products such as milk, fresh fruits, fresh vegetables, eggs, poultry, etc. therefore require almost daily use of the road for their marketing. These products are also easily susceptible to spoilage on account of rough and slow haulage. Because of these characteristics, the lacks of all weather improved village-to-market roads act as a great barrier to the expansion of their production for the market. Rural road network breaks the isolation of villages by evoking awakening in the rural farmers. Improved rural transport services which could facilitate the free flow of the farm produce to market/ consumer centres and agricultural inputs to rural farm areas are warranted to facilitate proper distribution of available food and to speed up the rural development in India. It helps the farmers and other rural artisans alike in supplementing their slender earnings and in protecting from the ill-favoured and squeezing brokers and middlemen.

ROLE OF RURAL ROAD AND ROAD TRANSPORT IN AGRICULTURAL DEVELOPMENT

One of the major barrier is to development of agriculture in India has been the lack of all-weather rural roads of village to market. A majority of villages still lack of good road links with market towns and with one another. Road improvement would leads to a decline in both average and marginal costs of production by encouraging the use of more productive inputs and farming techniques as well as by reducing the costs of inputs and of procuring inputs from the market. Improved communication and inability provided by all weather roads would expose farmers to modem. Agricultural practices. All-weather roads would also reduce the input costs to the farmers by permitting them to substitute low-cost motor truck transport for high-cost bullock cart transport in the procurement of agricultural inputs from the market. In the marketing of farm products as when it is recognized that the "rural road improvements would contribute to cost reductions by lowering the costs of transporting them to market and by reducing their spoilage while in transit". As in the transportation of farm inputs, improved roads would permit a shift to truck transport in the marketing of farm products and would reduce the marketing costs. Several studies reveals that while the cost reductions permitted by improved rural transport would create incentives for expansion of production for the market; there is no likelihood of a sharp decline in prices of farm products to completely offset these incentives. The Studies also shows that the market demand for agricultural commodities in India is potentially very high due to population growth, increasing urbanization, progress in industrialization and rising income. As such, in spite of a large increase in agricultural output, the agricultural price level would tend to remain relatively stable.

III. Conclusions

It is well known that the roads are playing an important role in uplifting the social, economic and cultural life of the people; access to good road network to rural areas enhances the socioeconomic status of rural poor and improves the living condition of rural population. There is a close relationship between rural roads and agricultural production, and also, the impact of such enhanced agricultural production on income, standard of living and other activities of the rural people. For this reason government of India gave importance to construction of rural road by launching Pradhana Manthri Gram Sadak Yojana (PMGSY) in 2000. This programme provide improved road infrastructure to rural farm sector and improving agriculture and socio economic upliftment of rural poor.

Infrastructure development has a vital role to play in economic growth and reduction in poverty. Infrastructure supply and services are particularly poor in rural areas, although urban infrastructure is also under pressure. The Investments made under the Bharat Nirman in Phase I and II would enrich the rural economy and shortening the gap between rural and urban India by enlarging the growth benefits uniformly. To make this a reality a synchronized approach is required to coverage the infrastructure building initiatives of Bharat Nirman components with various other development oriented programmes already in operation like programmes for alleviating poverty, generating gainful employment, ensuring social security enhancing standard of health,

hygiene, sanitation and education. Bharat Nirman has done good job but yet there are miles to go. There felt the need of improvement in rural infrastructure.

Few valuable recommendations are as:

The need is to strengthen decentralized, well-governed local institutions working at the village level, which have the potential for mobilizing and allocating local resources in enterprises for effective rural industrialization. Public initiatives should be encouraged in creating infrastructure Small scale community based infrastructure should be encouraged And in order to accelerate growth in rural road network, India needs to create a pipeline of public private partnership (PPP) project.

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