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Research Paper Engineering

PMGSY And Rural Roads Development In India : Economic, Financial And Maintenance Issues

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ABSTRACT

Rural roads in India are low volume roads comprising of both Village Roads (VRs) and Other District Roads (ODRs). The Government of India is financing rural roads construction to improve rural connectivity through Pradhan Mantri Gram Sadak Yojana (PMGSY) with the target of connecting every rural habitation with a budget of Rupees Six hundred billion (Sixty thousand crore). The programme is a big success with two lakh kilometers of road work already completed. The programme when completed provides connectivity to 1.6 lakh unconnected rural habitations. But, the maintenance of vast network of rural roads is a major challenge and requires significant annual maintenance budget. The local panchayats and State Governments may not effectively manage the maintenance programme due to paucity of funds. Hence, the responsibility of maintenance of rural roads should be with Central Government and the existing setup created to implement PMGSY should be effectively used for maintenance management of rural roads network.

Keywords : Rural Roads; PMGSY; habitation; panchayat; MoRD

Introduction

Rural roads for developing countries like India are not merely providing connectivity to the rural habitats, but also are the backbone for the development of the rural economy. Rural roads are the tertiary road system comprising of Other District Roads (ODR) and Village Roads (VR). These roads serve as feeder roads to the primary network and link villages with the nearest educational, health and market centers, or other villages. These are basically low volume roads serving different habitations. The economic uplift of the rural population, a substantial percentage of which is below the poverty line in the State, hinges crucially on the provisions of accessibility by means of roads. Rural roads contribute significantly for generating increased agricultural income and productive employment opportunities, along with promoting access to economic and social services. The current status of population in different categories of villages in India is shown in Table 1.

Table 1 Current Status of Population in Different Category of Villages

Sl. No.	Population Category of Villages	Total Number of Villages
1	Less than 1000	4, 59,465
2	Between 1000 and 1500	58,029
3	More than 1500	1, 43,248
	Total	**6, 60,742**

The Problems of Providing Rural Roads

1. Diverse including difficult nature of terrain.
2. Large number of scattered villages and low population size of individual villages.
3. Dominant nature of agricultural activities and lack of non agricultural pursuits.
4. High percentage of tribal communities who inhabit in scattered habitats inside forest and hilly areas.

Need for Central Intervention

The construction and maintenance of rural roads is actually the exclusive jurisdiction of the State Governments. In fact, the State Governments have delegated the responsibility of construction and maintenance of rural roads to local elected institutions known as "panchayats". But neither State Governments nor local elected panchayats are in a position to plan, design, construct and maintain a large network of rural roads due to paucity of funds. Hence the Government of India's resolve to provide rural connectivity as a part of the poverty reduction strategy has manifested itself in the Pradhan Mantri Gram Sadak Yojana (PMGSY), with the target of connecting every rural habitation that has a population of more than 1000 by the year 2007. In respect of hill states, desert areas and tribal areas, the objective was to connect habitations with a population of 250 persons and above by the end of the year 2007. The connectivity has to be through good all weather roads. The programme was formally launched on 25th December 2000. The task was to provide all weather connectivity to 160,000 unconnected habitations under the PMGSY. This included approximately 59,000 unconnected habitations with population of over 1000, 80,000 unconnected habitations having population range of 500-999 and 20,000 unconnected habitations having population range of 250-499. It was estimated that providing this new connectivity alone would cost about 34,000 crore. The total road length constructed would be of the order of 370,000 km. Another 24,000 crore was the estimated cost of bringing existing roads (mostly unmetalled and without adequate drainage works) to prescribed standards. The total project cost for the programme was thus Rupees sixty thousand crore. So far nearly 2 lakh km of road work has been completed at a cost of over ₹ 52 thousand crore.

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Socio-Economic Benefits

Economic benefits are objective, and can easily be manifested in figures and hence easy to formulate. Social benefits on the other hand, by their very nature are abstract. For instance, social gathering, access to market, hospital are the typical examples. They are difficult to put in figures and numbers. Not only this, social benefits are difficult to identify and quantify in comparison to tangible benefits. Some times social and economic benefits are inseparable from each other. There is a tight bond between the two and there is no clear demarcation. There can be some purely economic benefits such as the increase in road tax as consequence of construction of a road or a purely social benefit such as responsible citizenship as a result of community participation. Apart from purely social and economic benefits, there are a majority of social benefits coupled together with economic benefits, such as the human capital development as a result of investment in access roads to school. Frequent social gatherings, co-operation efforts, affiliations, celebrations, religious activities and leisure activities can be categorized as pure social benefits as a consequence of rural road and transport development. Accessibility, average travel time and wait time, comfort of travel, cost, security and reliability are some of the indicators of the same. Economic benefits can considered in terms of three target subjects, the workers, the producers and the land owners. For workers the development has provided working or labour alternatives. The indicators for this are the transport services available, average travel time, average wait time, reliability of service, security of the service and the economy of the alternate. For producers benefits are in terms of alternate markets, lower production rate and potential increase in production. For land owners the increase in cost of land is important. Therefore, it can be summarized that rural roads under PMGSY are the keys to bring out the sea change in socio-economic development of rural India. Some of the socio- economic benefits due to rural road networks are presented in the Table 2.

Table 2 Socio Economic Benefits

Sl. No.	Areas of Impact	Impact
1	Social Change	• Increased national Identity. • Improves Government village relations.
2	Women, Housewife	• Provisions of roads found to be liberating, providing them more opportunities, more choice and freedom from restraints of traditional society. • With road constructed by labour based methods increased employment opportunities.
3	Health and Nutrition	• Enable inhabitants to reach health clinics and personnel more easily.
4	Education	• Rural roads enable more children to attend classes more easily and smaller and more isolated communities to retain teachers. • Associated with the construction of additional schools.
5	Migration	• Strengthening of local market towns as administrative and economic centers.
6	Perceived Quality of Life	• Represents progress and provides visible benefits immediately. • Rural communities view road favourably.

Rural Road Financing

Though, the Central and State Governments have adequate technical expertise and are in a position to bear organizational capabilities to execute the programme, the financing of a programme of this magnitude is a serious challenge in the context of competing demands for scarce resources. Rural roads are a State subject, but it was realized that the finances of the State Governments did not permit allocations of the required magnitude. Accordingly, a conscious decision was taken to provide 100% Central financing for the programme, a major departure from the normal pattern where the cost is shared between the Central and State Governments.

The sourcing of funds for the programme has accordingly occupied the attention of Central planners. To be able to start the programme, resources was taken to an existing fund - the Central Road Fund set up in 1989 under a Parliamentary Resolution which levied a small cess on Diesel and Petrol, predominantly to fund National Highway construction and maintenance. The fund was given statutory status in the year 2000 as the Central Road Fund Act, an increased cess rate at ₹ 1.00 per litre of Diesel and petrol was levied. 50% of the revenues were enmarked for funding of rural roads development. This worked out to ₹ 2500 crore per annum. The cess was increased by another 50% during 2003-04 budget which resulted in budgetary support to PMGSY Roads to ₹ 3500 crore per annum. To meet the entire requirement of ₹ 60,000 crore from annual revenue source of ₹ 3500 crore would require the programme to go in for at least 18 years, far beyond the time frame of 7 years stipulated. Hence, Central Government has provided additional financial support to PMGSY programme.

Rural Roads Beyond 2010

When the PMGSY programme was initiated in December, 2000 it was proposed to achieve the targeted road constructions by 2007. Although, targeted unconnected habitations were connected during this period in many states like Karnataka, several kilometers of rural roads are to be upgraded to PMGSY standards. In Karnataka alone ten thousand kilometers of rural roads need up gradation to PMGSY standards. Hence, the programme is continued beyond 2010 since 1.5 lakh kilometer lengths of rural roads is to be constructed to achieve the set target of connecting all habitations with a population of 1000 or more. Even then 170,000 habitations, with population below 500 will still be left without any all-weather road connection. Hence, any attempt either to reduce the funding or winding up the programme will have disastrous effect on improving rural infrastructure.

Maintenance of Rural Roads

It was proposed to connect 160,000 unconnected habitations through all weather roads under PMGSY by the end of the year 2007. Since, the target has not been achieved in many States, the programme has been extended. In addition upgradation of existing rural roads has been taken up under PMGSY. As a result, the remaining unconnected habitations (approximately 170,000) will be gradually connected and existing roads in poor conditions will be upgraded. This result in creating a large network of rural roads with total length exceeding 20 lakh km. PMGSY is a huge Central investment in the State sector as part of a poverty reduction strategy. This investment is likely to be useful only if the main rural road network, particularly the rural Core Network is maintained in good condition. All PMGSY roads will be covered by 5-year maintenance contracts, to be entered into along with the construction contract, with the same contractor, as per the Standard Bidding Document. Maintenance funds to service the contract will be budgeted by the State Government and placed at the disposal of the State Rural Roads Development Agency (SRRDA) in a separate 'Maintenance Account'.

The PMGSY contractors have the liability to maintain the roads for a period of 5 years after the construction. The maintenance of rural roads beyond 5 years will be difficult due to lack of funds and expertise at local level. The 20 lakh kilometre length of rural roads is an asset worth more than ₹ 2000 billion at a very conservative estimate. The conservation of the assets of this magnitude is a task of national importance and a big challenge to experts, administrators, engineers and elected representatives.

Since rural through routes carry comparatively larger traffic, keeping them in good condition is particularly important. Through routes, on expiry of 5-year post-construction maintenance shall be placed under zonal maintenance contracts consisting of 5-year maintenance including renewal as per cycle. The State Governments will have to make the necessary budget provisions and place the funds to service the zonal maintenance contracts at the disposal of the SRRDAs in the Maintenance Account.

The rural roads are normally designed to function satisfactorily for a period of ten years after construction. This does not mean a rural road performs satisfactorily for ten years without any maintenance. Routine maintenance such as drain clearance, shoulder maintenance, pothole filling, crack sealing etc., have to be carried out periodically. Even with routine maintenance, a rural road is likely to perform satisfactorily for a period of 5 years. At the end of 5 years period, surface dressing or mixed seal surfacing or 20 mm thick PMC with seal coat may be necessary. Since contractor has a liability for only 5 year maintenance, the real maintenance problems arise only after expiry of maintenance contract.

The 20 mm thick PMC with seal coat for a kilometer requires an investment of 6 lakhs to 7 lakhs. In States like Karnataka, even if one thousand kms of rural road length has to be resurfaced, then the financial liability works out to be Rupees 600 million to 700 million. It is difficult for either local panchayats or State Government to fund such programmes due to paucity of funds and financial requirements for other priority areas such as drinking water supply schemes and primary education.

The cost of routine maintenance for each kilometer road length may vary from 20,000 to 50,000 as per present estimates. It is a known fact that maintenance cost increases with increase in age of pavement. While the maintenance cost for each kilometer of road length is just 20,000 just after one year of construction, it may be 50,000 after five years of construction. Since routine maintenance is a must for all rural roads, the maintenance cost for every 1000 km of rural road length, may vary form Rs. 20 million to 50 million. Hence, government has to make substantial investment in rural roads maintenance.

Several alternatives can be thought of to finance rural roads maintenance programme beyond 5 year contract period. The different alternatives have been discussed below.

Local Panchayats

The maintenance of rural roads can be handed over to local panchayats. Then it becomes the responsibility of each panchayat to maintain rural roads with in its jurisdiction. Each panchayat has to raise adequate resources to fund the maintenance programme. Unfortunately, local panchayats generally suffer from lack of funds. Moreover panchayats may divert the resources for other populist programmes such as housing and water supply. As a result, roads maintenance programme will get least priority. Moreover, required expertise for roads maintenance will not be available at panchayat level. A through road may run through many panchayats. In such a situation, even if one or two panchayats have not maintained through road in good condition within their jurisdictions, through traffic will seriously suffer. Hence, entrusting the task of rural road maintenance to local panchayats may not serve the intended purpose.

State Governments

The second possibility would be to takeover the responsibility of rural road maintenance by respective State Governments. In such a case, the State Governments have to allocate adequate financial resources to maintain rural roads in their respective states. `Road Development Plan Vision: 2021' also envisages the funding by respective State Government for maintenance of rural roads.

Road Development Plan Vision: 2021 recommends mobilization of additional resources through a special levy on agricultural produce from farm to market to finance rural roads construction and maintenance. State Governments have difficulty in implementing the proposal. A separate administrative setup has to be put in place to collect the cess. Farmers may also seriously oppose collection of cess on movement of agricultural goods. In addition, cess collected may not be substantial to compensate the expenditure on roads maintenance programme.

Central Government

The third alternative would be to make Central Government responsible for rural roads maintenance. In such a scenario, Central Government makes fund allocation to State Governments based on the total length of rural roads in each state. The Central Government can easily mobilize the required financial resources by levying additional cess on Diesel and Petrol.

In states like Karnataka, there are no unconnected habitations. Hence, upgradation of existing rural roads is taken up under PMGSY programme. In course of time even upgradation works will also come down and funds available for both new connectivity and upgradation of existing roads can be diverted to maintain the rural roads network. In such a situation, the existing State Rural Roads Development Agency (SRRDA) at State level can be retained and the administrative and technical setup created to implement PMGSY programme can be used to maintain the rural road network. The administrative and technical expertise available with SRRDA and Project Implementation Units (PIU) can be retained and can be used for effective implementation of Rural Roads Maintenance Programme.

Conclusion

The Central Government financing of rural roads construction through PMGSY is a huge success and the programme has been widely appreciated by public and people representatives and is likely to continue for few more years. But, the maintenance of the rural roads although a State subject, has not been successful due to limitations of maintenance budget at State level. Hence, Central Government funding for rural roads maintenance programme through National Rural Roads Development Agency (NRRDA) and maintenance management through existing State Rural Roads Development Agencies (SRRDAs) will be helpful in maintaining rural transport infrastructure in good condition.

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