

Improving road connectivity in rural India - a Community-Based Approach

Road construction is a critical aspect of infrastructure development in rural as well as urban India. An improvement in road connectivity brings with it several social and economic benefits. A good road may encourage more parents to send their children to primary, secondary and higher secondary schools. Good roads also provide better access to healthcare institutions and contribute towards lowering mortality – especially infant and maternal mortality. Farmers could also gain faster, cheaper and easier access to markets for his/her produce. Urban and rural economies can be better connected through good quality rural roads, which could improve the supply chain and promote economic growth.

Problems with road connectivity in rural India

While roads are an important lifeline for rural India, large parts of our country, particularly in some of the most backward states, continue to remain unconnected or poorly connected. In the past decade, efforts have been made by the Central and State governments to improve the network and quality of roads in rural India. The flagship Centrally Sponsored Scheme Pradhan Mantri Gram Sadak Yojana (PMGSY) was launched in 2000 to professionalize and expedite the process of rural roads' construction. An institutional mechanism was put in place at Central, State and lower levels for implementation and monitoring of works. The National Rural Roads Development Agency (NRRDA) was set up to prepare guidelines and build capacity of State level agencies.

Despite these efforts, many lacunae continue to exist:

- Lack of adequate *funds* with implementing agencies
- *Maintenance* of roads has not kept pace with construction.
- Finally, road construction and maintenance needs to be a more ecologically sustainable process, and provide *livelihood opportunities* to the local community.

A greater role for local communities, along with an emphasis on low-cost solutions may help to address some of these problems. An MP can be involved in either a) technically executing a road project, or b) involving the community in the development of roads in rural areas. The PMGSY has provisions for both of these approaches for road development in rural India.

Involving the community

In India, Panchayats have been given an important role in rural development. However, when it comes to road construction and maintenance, there has been very little involvement of Panchayats and the local community. Community involvement could improve the quality of roads in India, and also provide livelihood opportunities for the local community.

The local community can participate at all 3 stages of road development :-i) Road Project Planning, ii) Road Construction, and finally iii) Maintenance of Constructed Roads



1. Planning

In order to ensure that the road project has all the stakeholders on board, it could be useful to involve the local community at the planning stage. This would allow local knowledge to be tapped, and local concerns to be addressed. Such a participatory mechanism is called a “***Transect Walk***”. In India, such a pilot was carried out for the first time in Himachal Pradesh, as part of a World Bank initiative, as described below:

Transect Walk – Cheog, Himachal Pradesh

A transect walk is a walk along the suggested road alignment by the project implementing agency along with PRIs and community members. In this process, the implementing agency attempts to understand the various socio- economic issues pertaining to the place – such as land use, community assets, soil impact etc. This pilot was first implemented in Himachal Pradesh, where local elected representatives walked the entire stretch of the proposed route along with some members of the local community. Many issues were raised during this exercise. Alternative routes were proposed where it was felt that a heritage site, a seasonal water body, or a very poor farmer’s land was being acquired for road construction. In some cases, the PWD staff also made realignments to the proposed path after considering the concerns of the community. In other cases, the benefits of the road project were explained to those who were apprehensive.

The World Bank has also come out with a detailed methodology for transect walks, which could be followed for all rural road projects in India. The methodology includes aspects like when and where to start the walk, what to observe, when to stop, and things to do after a project walk.

2. Road Construction:

In mechanized road construction, there is limited scope for direct involvement of local community members in the process. However, an alternative to mechanized construction – called **labour- based road construction technology** – could be employed in certain cases. Many of the construction operations involved in road building, such as excavation, embankment construction, cross-drainage works, soil-stabilization can be undertaken **manually** with the help of other light equipment. In this approach, heavy equipment such as bulldozers is avoided.

This approach to rural road construction has been successfully adopted in many parts of the developing world, including Africa and China. Labour-based methods have been found to be especially useful in hilly regions, as can be seen in the Nepal case study below

Community-led rural road construction in Nepal



Nepal is a landlocked country with a large proportion of its population living in rural settlements on the hills.

The road connectivity in these areas is poor, with most roads suffering from poor alignment. Further, since the Himalayas are prone to landslides and earthquakes, the traditional method of mechanized road construction is not a sustainable solution.

Labour-based technology was therefore adopted in many parts of Nepal. The use of heavy machinery and explosives is done away with, and local labour is used for construction.

Apart from creating employment, this technology has been shown to have the following benefits:

- Reduction in risk of landslides
- Labour-based construction allows the road to integrate with the local landscape over time. As a result, adverse impacts on agriculture and environment are avoided
- Irrigation and drainage channels can be better protected.

The report of the Working Group under the Ministry of Rural Development also says that labour-based technology can be used by the different States under PMGSY for building roads in hilly areas in India

3. Road Maintenance:

The local community can play a significant role in maintenance of roads. Under the latest guidelines (November 2013) issued by the Ministry of Rural Development, there will be greater convergence between the employment guarantee programme (NREGA) and PMGSY. After the expiry of the 5-year maintenance contract by the contractor, maintenance of PMGSY roads would be carried out under MGNREGA. Also, road-side plantation works on PMGSY (Phase II) roads would be taken up under MGNREGA through the State forest departments. Such initiatives are expected to improve the durability of rural roads, along with providing employment to local community and reducing the carbon footprint in road construction.

Road Side Plantation under MGNREGA – The Muzaffarpur Case Study

In the Muzaffarpur district of Bihar, using the MGNREGA provisions, old and physically challenged females as well as other female members of the community with valid “Job Cards” engaged in roadside tree plantation. They also engaged in maintenance of the planted trees. This initiative resulted in several positive outcomes such as:

- Local people have a feeling of ownership.
- Long duration scope of employment for females in the community, especially the old and physically challenged.
- 100% survival rate of plants due to social fencing
- The initiative was deemed a durable asset as after 5 to 10 years the trees are expected to bear fruits and raw material for agro based industries, which could generate livelihood.
- Mitigating climate change

Further, Panchayats could be given a role in rural road management. Some of the important functions which could be devolved to Panchayats are:

- Taking road safety measures
- Redressal of any road-related grievances at the local level
- Maintenance of roads within villages

Apart from these measures, another innovation which could be implemented in India is “**Road Cooperatives**”. These cooperatives are popular in Finland, where they function as private road maintenance organizations. The cost of maintenance is shared by all communities living along the road. The governments at State and federal level also subsidize some portion of these maintenance costs.

These methods provide the local community with a sense of ownership of the roads created, and incentivize them to manage these roads better. They also provide livelihood opportunities for the local population, while being environment-friendly at the same time. From any perspective, community-based rural roads development is a win-win proposition for all stakeholders.

Resources

Schemes	Name of the scheme	Description
Central Schemes	PMGSY	Under this scheme, funds can be accessed for planning and construction of roads; The Phase II of this scheme allows for convergence with MNREGA and planting trees along side roads.
	MPLAD	Under this scheme, funds can be accessed for construction of roads.
	MGNREGA	Under this scheme, funds can be accessed for making the <i>kutchha</i> roads to WBM roads; Funds under this scheme could be used for maintenance of roads
Key Resource People	Sarpanch, Gram Panchayat	Responsible for preparing of plans and deciding the route of villages
	Director, National Rural Roads Development Agency (NRRDA)	Responsible for approval of plans; It also looks after preparing guidelines and building capacity of State level agencies
	Chief Engineer, Public Works Department	Responsible for construction and maintenance of roads