Rural Transport – Emerging Solutions - Management

TITLE: COMMUNITY PARTICIPATION IN CONSTRUCTION OF VILLAGE ROADS IN PUNJAB, INDIA

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ABSTRACT

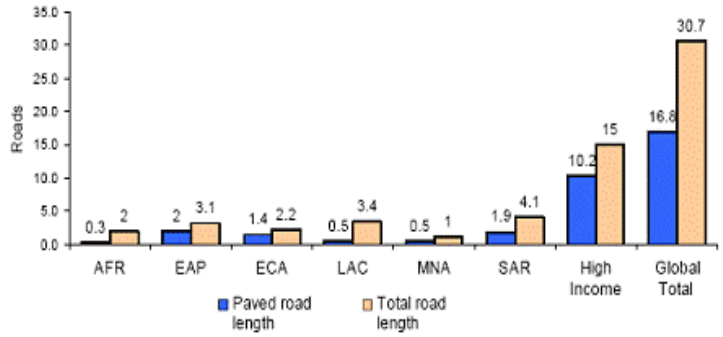
There is an enormous challenge to extend the all-weather road network in developing regions of the world with the limited resources available. Thus, it is important to efficiently and equitably mobilise all available resources to meet the substantial challenges of infrastructure provision to support economic and social development. There are a number of ways that communities can be mobilised to provide inputs to a road construction programme. There is increasing interest in the role of faith groups in rallying communities and advancing the pace of rural development.

In Punjab, India, the concept of Kar seva, or community self help, is widely prevalent. Local communities, often under the umbrella of religious or self government institutions, pool their resources to implement public projects. This practice has been effectively used in Punjab to provide rural accessibility by linking each of approximately 11,000 villages with at least one all-weather road. This approach has helped in building strong stakeholder participation, lowering cost of construction and achieving equitable and efficient usage of local resources and local skills.

1. BACKGROUND

The recently released World Bank's Business Strategy for the Transport sector highlights the enormous challenge ahead to provide universal access to poor rural communities and achieve the Millennium Development Goals (MDGs). Although transport is not specifically quoted in the MDGs, it is clear that an effective and functioning transport system is necessary to enable a number of the specified goals to be achieved and sustained. The Bank's report's Figure 4.1 shows that in Sub-Saharan Africa and Latin America only about 13% of the road network is paved. In South Asia the proportion is about 32%.

Figure 4-1. Length of the road network, by region, 2005



Source: International Road Federation Statistics 2005 and World Bank analysis.

Acronyms: AFR: Africa, EAP: East Asia and Pacific, ECA: Europe and Central Asia; LAC: Latin America and Carribean, MNA: Middle East and North Africa and SAR: South Asia Region

Source: World Bank Transport Business Strategy (2008-2012)

There is therefore an enormous challenge to extend the all-weather road network in these and other developing regions with the limited resources available. It will be necessary to improve and develop appropriate approaches for resourcing and managing road construction programmes. There is increasing interest in understanding the scope for and limits that communities can be expected to play in the provision and care of rural transport infrastructure. The key point to determine is whether cooperative approaches could potentially allow the provision of rural road infrastructure at costs substantially below traditional methods of delivery, with new imaginative but equitable arrangements.

In essence, the resource components required to construct and maintain a rural road are as shown in the following table.

Table 1 – Opportunities for community involvement/support in rural road development

Component	Possible sources/contributions
1. Planning	Local authorities in consultation with community groups. This should optimise road infrastructure with other facility provision, using consultative techniques such as Integrated Rural Accessibility Planning (IRAP)
2. Design	Alignment, structures and drainage system design require professional inputs. These may be provided by competent government authorities or by professionals' services secured or paid for by benefactors/NGOs etc.
3. Construction	**Land** – should be secured equitably from the community with disadvantaged families being appropriately and transparently compensated. **Labour** – Labour-based methods can provide good opportunities for generating local jobs and hence income opportunities. These methods are often competitive with mechanized approaches. A further benefit is the multiplier effect of income earned and spent in the local community. However in certain circumstances it may be appropriate to provide labour inputs voluntarily, if the initiative is community driven and they are the main beneficiaries. **Equipment/transport** – can be provided at subsidised rates or voluntarily by local enterprises or paid for by benefactors/NGOs etc. **Materials** – can be locally sourced and paid for by benefactors/NGOs etc. This again provides enterprise opportunities and potential jobs. **Professional services** – for setting out, supervision, any testing required and quality control can be provided by competent government authorities or by professionals' services secured on a voluntary basis or paid for by benefactors/NGOs etc. **Record keeping and accounting** – can be carried out voluntarily or by paid persons. Should be transparently operated.
4. Maintenance	The road design should be made on 'whole life' considerations to ensure that the maintenance is both feasible and affordable. Low maintenance, local-resource-based surfaces can be provided, usually at reasonable cost. Local labour can be mobilised to carry out off-surface maintenance such as vegetation control and drainage system care.

In the absence of a well developed, comprehensive and fully funded public tax and service provision system, it may be possible that there are a number of ways that communities can be mobilised to provide some of these inputs. Other stakeholders or benefactors can also contribute to substantially reduce the overall cost of providing and managing the rural road infrastructure.

It is important that certain issues are fully considered and equitably dealt with where contributions are sought from a community. These include:-

- Routes selected should be of primary benefit to the community and not 'outsiders' or local special interests.
- Initiatives should be 'driven' (motivated and lead) by the community

- All stakeholders should be fully aware of the arrangements, responsibilities, commitments and timings. This should be achieved through an inclusive consultation process.
- All members of the community contribute in an equitable manner and no advantage taken of poor or other groups within the community.

This paper provides an example of how community groups have successfully constructed rural road infrastructure projects in Punjab State, India.

2. INTRODUCTION

Punjab is largely an agrarian state located in the north western part of the alluvial plains of India. With predominance of agriculture as the primary sector in the state's economy, improvement of rural accessibility has been a key focus area of planners since independence in 1947. Nearly four decades ago, the state launched a programme to provide connectivity of all villages to main roads by providing at least one thin bituminous surfaced road link (hence the name *link roads*). Punjab successfully achieved its goal within a decade. This distinctive achievement was in advance of other states, wherein the first level of connectivity has not been achieved even today. The total length of link roads in Punjab now extends to 48,000 kilometres. The surface of these roads is usually ten feet (3.05 metres) wide. Typically, a link road touches the village, belts it along its periphery and leaves to connect to the next village. The part of the road going around the village is called '*Phirni*' with usually two or three mini bus stops located at convenient points. Rarely do these link roads enter the village. The inner village is served by fired clay brick surfaced lanes that connect to the '*Phirni*'.

3. KAR SEVA

Sikhism, the predominant religion in Punjab, has several concepts which build strongly on communal approach to public affairs. One such concept is of '*kar sewa*' – a Punjabi word literally meaning 'to serve with one's own hands' or to render voluntary service. Kar sewa is performed to build, maintain and repair shared community resources like *Gurudwaras* (Sikh religious temples), *dharamshalas* (village halls), schools, drains, ponds. *Gurudwaras* are administered by the local community or by local Trusts. Another form of *kar sewa* is the *'Guru ka Langar'* or free community kitchens run by the *gurudwaras* for all. Here, people from all walks of life eat together from a community kitchen. Not only do people donate food, but they also cook, serve the food, clear the place and wash the dishes voluntarily. This service, maintained 24 hours a day, seven days a week, by many *gurudwaras*, is run entirely on *kar sewa* or voluntary work.

In 1960, agricultural production started to increase rapidly [called the Green Revolution] due to introduction of superior technology, better crop management and improved seed availability, among other factors. Government began to focus on improving rural infrastructure especially rural roads. Strengthening of marketing networks, enhanced employment opportunities and provisioning of basic necessities like health and education have strong dependence on a good road network.

When the task of building link roads was taken up in 1968 (euphemistically called "crash programme" because timelines were crashed to expedite the implementation) along with the rural electrification work, the state encountered severe shortages of funds. The aim was ambitious considering the fact that less than 40% of 11,000 villages of the state were connected at that time. To accomplish this task, Government decided to adopt the age old method of Kar seva or community self help. It was decided that:

a) The land for the link road shall be made available by the local community out of common community land pool (*shamlats*). Villages have a local government institution called *Panchayat* which owns, operates and maintains community resources.

b) Earthwork on the village road works shall be done by the villagers.

c) Such links, where the above two tasks are completed first, shall gain priority for funding under this programme.

Photo 1 – Road linking village Khiala to Mankoo in Punjab constructed by Religious Trust body

The scheme evoked a strong response among the villagers keen to get link roads for their villages and helped link nearly all villages with a good all weather connection within a decade of roll out. Another positive fallout of this policy was social cohesion seen due to involvement of *Gurudwaras* in community development. It also helped dispel a general distrust of Government initiatives as public perception is sometimes exaggerated in terms of expectations.

Later, to maintain the assets so created, Government decided to supplement the availability of funds by successfully setting up a dedicated fund (called Rural Development Fund or RDF). This was another major success. Since 1982-83 no major funds have been provided for construction or repairs of the village roads by the Government in its budget except through RDF . The tradition of community participation in road working continues as earthworks are still completed through their help.

Institutionalization of community participation in public works programmes was the key to the success of the Government's initiative. On the other hand, these all-weather, bituminous roads have been used by the enterprising farmers of Punjab to transport the grain from the fields, to feed the wider country and gain prosperity. Punjab remains the largest contributor to the surplus grain pool in India; up to 70% of such grains are procured in this one state.

4. IMPLEMENTATION MECHANISM

The Public Works Authority in charge of road works in the area begins by preparing a detailed estimate including the detailed design for a specific work project. No funding is earmarked for doing earth works on the road. This helps in lowering the cost of construction by typically nearly 20%. The usual administrative procedures are adopted to sanction the estimates and secure the earmarking of the funding.

The local community is informed of the Government's decision to go ahead with the work. Simultaneously, procurement of a contractor to complete the other road components is also accomplished. The local community is usually informed through functionaries of local government (head man (Sarpanch) of Panchayat and/or Block Development Officer).

Government engineers set out and verify the road alignment and structures and mark formation levels for guidance of villagers. A close liaison is maintained with the local community so that earth works are completed in accordance with the work programme of the contractor. Guidance is provided on the type of earth to be brought to site. Since across Punjab, good quality soil for earthworks is easily available, these checks are somewhat informal and largely local wisdom and experience is relied upon.

While the details may vary, generally villagers accomplish the assigned task in the following manner:

- The local community is informed of the task through public announcements, usually made from *Gurudwaras* and a date is fixed for the task. These announcements seek participation on a voluntary basis. The announcement clearly spells out the quantum of work and resources required to be mobilised. Care is exercised to avoid scheduling conflicts with social functions or festivals. A typical announcement would advise:

  ……. *You shall be pleased to know that the Government has sanctioned the work of xyz. Now to complete the work assigned to us, the community shall gather at 5 AM at village Gurudwara on the day of……..... We shall need minimum 15 trolleys (tractor driven agricultural trailers) and 30 persons for loading and unloading. The work shall be completed by the afternoon. Vehicles shall be provided with fuel slips by Sarpanch at start of work. All households are requested to contribute Rupees 100 each. During this course of the works the community kitchen shall provide food and tea. All are requested to participate in this common cause. ….Thank you……*

- While the first link work had evoked strong all round participation, for works on second or third link or already operational links, usually direct beneficiaries i.e. people with land ownership along the road, take the participation lead.
- On the appointed day, the villagers mobilise resources. A village elder takes over the lead role for the occasion. Resources include tractor driven trailers, excavators and manpower. It is a common practice to provide the fuel for mechanical equipment from the common funds pool. Sometimes these expenses are defrayed from impromptu collection of funds from the community while at other times, it is met out of *Panchayat* funds. The money so collected is duly accounted for and participants informed.

Photo 2 – Earth works being done by Villagers

- The source of earth is identified. The work is divided into four broad categories; excavation and loading, transportation, unloading and finally spreading and compacting. Different groups work in tandem to complete the task. Usually no more than couple of days are needed to complete the earth work. Support of Government technical personnel is provided to ensure proper compaction.

- In case of non-availability of mechanical resources (as was usually the case earlier in seventies), communities would arrange tractor trailers on hire and expenditure incurred was met out of common pool funds. The villagers would contribute by doing manual labour for loading/ unloading/ spreading/ watering.

- The compaction of earthwork is done by the road contractor. The contracts usually have a line item rate to cover this task.

- Once the road is completed, the completion certificate is issued by the *Sarpanch*. Though, this certificate makes a clear mention of component of works done by Public Authority, details of community work are not recorded as per prevalent practice.

Photo 3 – Innovative approach to load earth using common agricultural machinery

5. OTHER ACTIVITIES

In addition to Kar sewa being done by *Gurudwaras*, the State Government is encouraging establishment of youth clubs. These clubs plan the programmes for the village development, such as maintaining cleanliness of streets, drains, earth work on village lanes, plantation on common land pools and also on side slopes of high road embankments, with technical help provided by government engineers. Details about the activities of these youth clubs are available at http://www.punjabsewa.gov.in/citizen-services/. These youth clubs also keep the pubic authorities informed about the condition of roads, and accident black spots on the roads. In recent times, 'volunteers' from local *Gurudwaras* and the youth clubs have also started providing first aid to accident victims.

6. KEY LESSONS

First and foremost, people's motivation for community development comes from their cultural (and faith) values and a desire for seeking economic betterment. Once the community's basic needs are fulfilled, faith institutions hold a key to keep the motivation for community development works high.

Integrity, honesty and empowerment are key to sustainable community development. Faith can help underpin these ideals and provide a unifying force for communities engaged in development pursuits.

Community participation in road construction yields best results when the network is in a growth phase and the demand on community help is not an excessive burden, or constrained by technical issues.

The local community must be empowered to take all important decisions regarding their inputs. Government supervision of such works should be supportive and non restrictive.

Government should recognise and affirm community participation through effective dialogue and complementary local initiatives.

7. CONCLUSION

Constructing rural roads following the community participation approach offers several benefits over the traditional road construction approach as demonstrated in Punjab. First and foremost, it is more affordable as the construction technique uses locally available material and people to construct the road. It is participatory as the community stakeholders are actively engaged from planning to operation and maintenance of the road. This creates a good sense of ownership. It is thus an approach which is suitable for the construction of rural roads in a participatory manner and at lower cost than otherwise achievable.

Photo 4 – A view of Bridge constructed over Nasrala Choe village Mankoo on village Road linking Kathar to Fughlana by Sant Baba Bhag Singh Charitable Trust

REFERENCES

1. World Bank, 2008, World Bank Transport Business Strategy (2008-2012).
2. Government of Punjab documentation.
3. Charitable and Religious Trust documentation.
4. gTKP and SEACAP reference documentation.

Contribution of Sikh Religious Institutions in Public Works - Some Examples

Local community in Doaba region of Punjab under the aegis of a Sikh Institution (Dera Baba Bhag Singh Charitable Trust) has planned, designed, financed and constructed a 308 metre long, 7 metre wide reinforced concrete (RCC) bridge over a seasonal rivulet. There are 13 simply supported spans and the bridge has 9 metre diameter well foundations. This is located on a village road connecting village Mankoo with village Daroli (Photograph in the main article). This bridge was constructed at a cost of INR 50 million (US$ 1.2 million) in eleven months during 2001.

This area is located in the foot hill of lower Shiwaliks (lowest range of Himalayas) and is criss-crossed with seasonal rivulets [called *Choes* in vernacular]. During monsoons, these usually benign looking creeks suddenly swell up and often flood with catastrophic effects.

The same community has constructed two more bridges and two roads at its own cost:

- 72 feet (22 m) long RCC single span bridge at village Khiala costing INR 2 million (USD 0.044 million)
- 180 feet (58m) long RCC bridge at Village Lutera costing INR 5 million (US$ 0.12 million)
- 1.75 Kilometre long village link connecting Khiala to Bhadiana costing INR 1.3 million (US$ 0.025 million)
- 3 Kilometre long road from Hariana to Girls college at village Bhadiana at an estimated cost of INR 4 million (US$ 0.1 million)