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TITLE: IMPROVING MOBILITY FOR THE RURAL POOR, AN APPROACH IN BANGLADESH

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1. INTRODUCTION:

Many inhabitants in Bangladesh suffer from inadequate and expensive transport infrastructure and services. Poor access to transport constrains economic and social development and contributes to poverty. Better transport services can stimulate economic activity and social improvement, leading to easier access and more efficient transport services-a virtuous circle that reduces poverty and improves the lives of poor rural residents. Improving rural people's access to essential services requires improving mobility through transport infrastructure and services as well as the location, price, and quality of facilities. Better mobility gives people access to services (education, health, finance), markets, income earning opportunities, and social, political and community activities.

Bangladesh remains primarily a rural society, with about 80% of the population living in rural areas. Although rural Bangladesh is poor, it has many characteristics, which result in a highly active rural cash economy in which mobility and trading are of crucial importance. As a predominantly rural country, rural infrastructure plays a vital role in supporting economic growth. Some of its most important components include transport, markets and electrification. These have advanced a long way since separation from India (1947), when as East Pakistan, it had only 600 km of hard surface roads and rural areas had virtually no access to electricity. At the time of independence of Bangladesh (1971), the primary and secondary highway networks had increased to 4,000 km. Today, Bangladesh has a stock of 4,440 km of railway track, 5,200 km of National and Regional Highway, 10,000 km of Feeder Roads Type-A. The country rural transport & trading infrastructure consists of 2,100 identified growth centres, 15,000 km of B-type feeder roads, 90,000 km of rural roads and about 8,500 km of inland waterways on which 300,000 country boats cater. As regards the small-scale water resource related infrastructure, 1,000 km of embankment and 4,000 km of canal have been earmarked for development

2. BACKGROUND OF RURAL DEVELOPMENT

The Government's rural development programme, which has its origin in the early 1960s, was conceptualised essentially as an instrument for providing support for increasing agricultural production. The rural development model known as the "Comilla Model" emphasized the formation of cooperatives and the integration of support services provided by government departments. The model had four major elements:

- Two-tier Cooperative-Kiishak Samabaya Samity (KSS) and the Thana Central Cooperative Association (KCCA)
- Rural Works. Programme (RWP)
- Thana Irrigation Programme (TIP)
- Thana Training and Development Centres (TTDC)

3 STRATEGIC PLANNING FOR RURAL DEVELOPMENT

3.1 RURAL TRANSPORT IS CRUCIAL TO POVERTY REDUCTION:

Poor access to transport in the rural area constrains economic and social development and contributes

to poverty. Improving rural people's access to essential services and requires improving mobility through transport infrastructure and services as well as the location, quality and prices of facilities. Better mobility facilitates the delivery and receipt of better services – education, health, food, agricultural inputs and products delivery, income generating opportunities, social, political and community activities, & this alleviates poverty.

3.2 RURAL DEVELPOMENT STRATEGY IN BANGLADESH:

'The Government of Bangladesh (GOB) formulated and adopted the Strategy for Rural Development (RD) projects in 1984. The strategy includes, among others, that the RD Projects will have a combination of three components.

- Development of physical infrastructure including roads, bridge, storage and markets.
- Integrated agriculture, minor drainage and flood control works.
- Production and employment programmes for the rural poor (rural poor will be the landless and those having land up to 0.50 acres).

Agencies responsible for implementation of the three components of RD projects:

- For development of physical infrastructure: Local Government Bodies with technical assistance from Local Government Engineering Department (LGED).
- For development of irrigated agriculture etc: The LGED and the Ministry of Agriculture in association with the Thana/Upazila Parishad.
- For production and employment programmes: BRDB in collaboration with the Thana/Upazila Parishad and other concerned agencies. The Non-Govemment Organizations (NGOs) will also take up activities in areas not covered by BRDB.

3.3 BANGLADESH RURAL INFRASTRUCTURE STRATEGY STUDY, 1996

The LGED and the Word Bank jointly conducted a study on Bangladesh Rural infrastructure Strategy in 1996. The conclusions made were:

- RDS strategy's (1984) approach remains valid.
- No major changes are required, only some readjustments or "fine-tuning" may be justified.
- Targets will have to be reset due to recent increase of growth centres from 1.400 to 2,100.
- Regional priorities will have to be defined with view of the natural potential of the regions.
- More emphasis on user/community participation.

4. RURAL DEVELOPMENT - THE FIFTH FIVE YEAR PLAN (FFYP:1997-2002)

Since poverty is the most pressing problem in the rural areas of Bangladesh, the Rural Development Plan must continue to effectively address the poverty problem. For this, the plan has to pursue an employment led growth policy. The focus of the policy would be to promote greater opportunities for the rural poor for productive employment in both farm and non-farm sectors of the economy. The poverty eradication and employment orientation of the Fifth Five Year Plan (FYFP) requires special focus on rural development institutions for productive use of rural resources.

The following are the objectives of the Fifth Five Year Plan for the RD Sector:

- Reduction of poverty in the rural areas;
- Productive employment generation in the rural areas;

- Self-employment creation for the rural poor;
- Development of rural infrastructure;
- Development of small and landless farmers.

4.1 PROJECTS UNDER RDI SECTOR DURING FIFTH FIVE-YEAR PLAN

Under the rural infrastructure development programme during the Fifth Five Year Plan, projects will be taken up for development of growth centres and growth centre connecting roads, bridges and culverts on the one hand and small-scale irrigation and flood control related infrastructure projects on the other. Road maintenance programmes, mostly rural roads, will be implemented through the rural destitute women and eventually they will accumulate saving to undertake income-generating activities by themselves. The targets for the Fifth Five Year Plan under the RDI Sector are as follows;

Employment under infrastructure programme	: 175 million person day
Growth Centre Development	: 600 nos
Feeder Road Type-B	: 7,000 km
Rural Roads	: 5,000 km
Bridge and Culverts	: 100,000 m
Small-scale water management related infrastructure	
Embankment	: 1,000 km
Kha/Canal	: 4,000 km
Water Control structure	: 350 nos.
Maintenance of physical infrastructure	: 10,000km

5. RURAL TRANSPORT SYSTEM IN BANGLADESH

Bangladesh is one of the poorest countries in the world, with nearly half of its population of 130 million people subsisting below the poverty line. Both population and poverty are concentrated in the rural area, where 80% of population and 90% of the country's poor reside. Geographically, the country is prone to natural disasters, especially floods and cyclones, which have a sever impact on agriculture and the livelihoods of the rural population. The rural cash economy is the major element of Bangladesh economy. High population density, high productivity of land and small scale farming activities provide a favourable basis for intensive trading of goods and services in rural areas. Thus the rural transport and trading infrastructure, which consists of rural roads, inland water transport, and rural market networks is crucial factor for growth of rural and national economy. The road network comprises national, regional highways (primary road network), feeder roads (feeder road type A and & type B) and three levels of rural roads ((tertiary road network- R1, R2, R3). The Roads and Highways Department (RHD) is responsible for the primary and type A feeder roads; while Local Government Engineering Department (LGED) is responsible for feeder type b and the whole rural road network. Functionally the national and the regional highways link the administrative and economic centres, while the feeder roads connect rural markets and the rural roads connect the village and the rural areas.

The Main Elements of Bangladesh's Rural Transport Infrastructure are:

(1) Rural roads, which are, though extensive, mainly poor quality earth roads, requiring improved surfacing and pavements on a selective basis, and interspersed with many gaps to be filled with drainage structures for allowing uninterrupted traffic; most of these are seasonal roads, generally not usable in the rainy season, creating considerable hardship for transportation during the monsoon period; and **road transport** with a strikingly dominant share of non-motorized transport (manually pedalled cycle rickshaws, passenger rickshaws and rickshaw vans, and to some extent animal-drawn carts) which provide reasonably efficient rural transport suited to carry small-parcel loads needed by most farmers, and also provide employment to a large number of the rural poor.
(2) Inland water transport (IWT), the traditional transport system of Bangladesh, which criss-

crosses the country and carries a large part of rural traffic through small country boats. However water transport needs to be better integrated with road transport with the provision of more landing facilities (river ghats) for country boats, while also requiring other priorities such as channel dredging, navigational safety aids etc.

6. INSTITUTIONAL FRAMEWORK FOR RURAL TRANSPORT

6.1 EVOLUTION OF LOCAL GOVERNMENT ENGINEERING DEPARTMENT (LGED)

Through transformation of the erstwhile Works Programme Wing (WPW) under the GOB Development Budget, the Local Government Engineering Bureau (LGEB) was created under the GOB Revenue Budget in October, 1984. LGEB was upgraded as the Local Government Engineering Department (LGED) in August 1992. LGED's Chief Executive is the Chief Engineer who is supported by 2 Additional Chief Engineers, 4 Superintending Engineers, 6 Executive Engineer-s, 6 Assistant Engineers at the HQ, 6 Superintending Engineers at region, 64 Executive Engineer's at the districts and 460 upazila Engineers at the upazila. The total number of engineers and staff under the permanent establishment of LGED is 9,548. LGED is now one of the prime engineering organizations engaged in the infrastructure development of Bangladesh.

6.2 RURAL INFRASTRUCTURE DEVELOPMENT ACTIVITIES CARRIED OUT BY LGED

The types of rural infrastructure development activities carried out by LGED under rural development projects/programmes comprise the following:

- Construction of feeder road Type-B
- Construction of rural roads
- Construction of bridges and culverts on feeder road Type-B and rural roads
- Development of growth centres and rural markets
- Construction of TTDC buildings and Union Parishad Complex buildings
- Construction of landing jetties, ghats
- Construction of small scale water resource scheme, such as, construction of embankments, Cross-dams, re-excavation of khal, construction of small sluices and regulators
- Re-excavation of khas and other ponds
- Tree plantation on slopes of feeder roads Type-B, rural roads and embankments
- Routine maintenance of earth roads, Herring Bone Bond (HBB) roads and other paved roads
- Construction and reconstruction of school buildings, office buildings, flood shelters, cyclone shelters and killas

7 PLANNING AND IMPLEMENTATION OF RURAL INFRASTRUCTURE

7.1 COMMUNITY/BENEFICIARY PARTICIPATION IN RURAL INFRASTRUCTURE DEVELOPMENT.

The concept of community participation in infrastructure planning, Implementation and maintenance has surfaced quite recently in Bangladesh. The concept arises from the need to maximize the impact of rural infrastructure. Development planners are increasingly concerned that infrastructure, which does not represent the hopes and aspirations of the community, will not be used by it and the community will be reluctant to share the responsibility for its maintenance. The process of involving the community in infrastructure planning, implementation and maintenance involves answering two basis questions (i) why community participation? and (ii) how community participation can be ensured? Whilst the beneficial effect of involving communities in infrastructure development is accepted by all, modalities for involving them may vary widely.

The effectiveness of community participation may depend on the following:

- Socio-political situation of the country,
- Institutional capacity of the organization,
- Extent of the intervention.

The effectiveness of community participation in rural infrastructure planning, implementation and maintenance has already been recognized. Rural communities are increasingly being involved for these purposes. For rural infrastructure development LGED has embarked on an information sharing approach with a long-term view of adopting "users input approach". In this regard, institutional constraints are progressively being identified and removed. Institutional capacity is being enhanced through reorganization - for example, redundant staff are being trained as community organizers. Staff at all levels are being motivated for this purpose as well.

Stages of community/beneficiary participation on rural development projects are mentioned in Box - 1.

Box-1: People's Participation in LGED's Infrastructure Development Projects

The participating Entities:

- Representatives of Local Government Institutions (LGIs)
- Project Implementation Committee (PIC)
- Beneficiary groups such as LCS, WMCA
- Rural Poor, Destitute Women

Level of Participation:

- Identification, selection and planning of infrastructure scheme
- Design of infrastructure scheme
- Implementation/construction of scheme
- Monitoring of infrastructure works
- Operation and maintenance of infrastructure
- Financing of infrastructure improvement and maintenance

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Studies in Bangladesh have found that the end users of the infrastructure feel that they should be involved in the planning and decision making regarding public investments for their benefits, In the preparation of the IDA/Swiss Development Corporation (SDC) assisted Rural Roads and Markets Improvement and Maintenance Project (RRMIMP-11) emphasis has been given to the participatory approach to rural infrastructure development. A particular study was conducted to look into the aspects of participation under the project. The participatory approach has been adopted for pre-selection of FRBs, Growth Centres (GCs) markets and ghats for improvements under the project .The process involves group discussion at Upazila level with representatives of each Union (as well as relevant government officials) to identify and rank local priorities for improvement. Considering the huge area covered under the project community participation aspects have been made practical and manageable. The steps in the "participatory approach" adopted for the selection of FRBS, GC markets and ghats are:

Step 1: Initially an inventory of all FRBs, GCs in the project area was prepared. A list of possible investment schemes was prepared excluding those already developed under different investment schemes.

Step 2: Using the list of "possible" schemes as starting point participatory meetings were organized in each of the project upazilas attended by local representatives including

Union Parishad members and NGOS. The meeting discussed the schemes and reached a consensus and ranked their priorities for FRBs and GCs. In the meeting consensus and decisions were reached though open debate. The meeting also identified the priority ghats for improvement.

Step 3: The locally prioritised FRBs and GCs were used to prepare a list of probable FRBs and GCs to be taken up for improvement

Step 4: The final list of selected FRBs was made on the basis of the economic appraisal. The final lists of the GCs and ghats were derived from the short-list based on locally identified priorities.

Step 5: The Upzila Development Coordination Committee (UDCC)s were subsequently requested to confirm their agreement with the selection of investment schemes.

7.2 IMPLEMENTATION

Mode Of Implementation

Construction of schemes are carried out through the following modes:

- Contractor
- Project Implementation Committee (PIC)
- Labour Contracting Society (LCS)

Construction through PIC

Schemes under some infrastructure development projects of LGED are being constructed through PIC. It is ensured that the PIC represents a wide range of people and provides for effective local level participation in scheme implementation. The Union Padshad will approve formation of PIC. All PIC members will be the residents of the concerned Union. The PIC will consist of:

Union Parishad Chairman or Member
Social worker
School teacher
NGO worker, if available
Member of VDP
Workers Representative

The Committee includes at least one-woman member, preferably UP member, school teacher or social worker. The committee comprises -7 members including its Chairman. A separate PIC will be formed in each union. The local Union Parishad Chairman or member is normally the chairman of the PIC. The Secretary of the PIC is selected from among the members of the PIC.

The Chairman, Secretary and Members of the PIC are individually and collectively responsible for execution of the scheme, to ensure that the work is done in time and as per specification and that the labourers are paid in time and correctly. Labourers are selected from the neighbouring area of the scheme. Preference is given to organized labour groups. The PIC holds fortnightly meetings. Resolution notes will be recorded in minutes. Two-thirds of the members must be present to form a quorum.

Construction through LCS

Since mid 1980s Labour Contracting Societies (LCS) are being used as a new and innovative mode of construction and maintenance of physical infrastructure. The use of the LCS is considered as a landmark in targeting poverty alleviation directly with infrastructure development The LCS are now

engaged in different rural infrastructure development projects of LGED. The main objectives of the use of LCS for infrastructure development are to directly involve the landless groups/destitute women in infrastructure construction and maintenance; (ii) provide employment and income opportunities for the landless groups/destitute women; (iii) eliminate intermediaries for project construction and maintenance activities; and (iv) ensure fair wages to the labourers. Government is committed to continuous innovation in direct targeting of poverty alleviation with infrastructure development.

LGED's experience with LCS is elaborated in Box - 2.

Box - 2 : Targeting Poverty Alleviation Directly to Infrastructure Development - the LCS Model

- LCS comprises of a group of 7-30 landless labourers who depend on manual labour as their main source of income and do not operate more than 0.5 acres of land. On an experimental basis LGED's experience of use of LCS as a new and innovative mode of construction in infrastructure development goes back to 1983-84. The LCS are now active in different rural infrastructure projects executed by LGED.

- Initially LCS involvement was mainly limited to earthwork and pipe/culvert installation. Over the years involvement of LCS has been expanded and now LCS are involved with scores of construction and maintenance activities which includes earth work of road, embankment canal etc. pipe casting and culvert installation earthwork and structure maintenance; tree plantation on roads, embankments and care taking of trees and other construction activities like Herring Bone Bond (HBB) bricks laying, box culvert construction etc. As the groups are gaining experience and showing good performance there is a plan to involve the groups in more specialized construction activities.
- The LCS are not only being trained on the technical issues of infrastructure development but also on other social issues like sanitation, nutrition, women's rights, environmental awareness etc. The group members are motivated to spend their earnings on things like latrines, nutritious food, health care, children education etc

8 SUSTAINABILITY OF RURAL TRANSPORT SYSTEM

8.1 SOCIAL DIMENSION

For the sustainability of development approaches, the Infrastructure & Social side should run side by side. They should sensitize the beneficiaries that the infrastructure is build for them, for their livelihood, it is their assets etc.

The following activities are also being done for social integration and the institutional development under the shadow transport projects.

8.2 INSTITUTIONAL DEVELOPMENT

Training and technology transfer is of paramount importance to the success of any institution. Proper supervision of development projects by trained staff is a key element in the construction of quality infrastructure. From the beginning, LGED put great emphasis on training through its Training Unit. A well-designed training programme for all categories of staff was designed and implemented. LGED has ongoing training programmes at its headquarters' in Dhaka and in 13 Regional Training Centres throughout the country. After an assessment of the training needs of different categories of staff, contractors, elected representatives of local government institutions, and beneficiary groups,

detailed training programmes are formulated. Training is implemented through participatory methods and necessary audio visual aids are used. Training modules are prepared and made available to the trainees. On the Job Training is provided to follow-up the level of application of various types of training received by the field staff, and assist them in performing specific tasks in a better way with additional input from the trainer.

The training programmes would normally include:

· Training of LGED/project staff
· Training of the elected Representative/Officials of the Local Government Institutions
· Training of Community Organizers
· Training of Market Management Committee Members
· Training of Labourers, Members of LCS, PIC, WMCA
· Training of Contractors

8.3 SUSTAINABLE DEVELOPMENT OF INFRASTRUCTURE WITH COMMUNITY PARTICIPATION: THE LOCAL DEVELOPMENT FUND (LDF)

For strengthening performance of Local Government bodies, namely the Union Parishad, the lowest level of elected body of local Government, effort has been exerted in some RD projects, where an amount is kept in reserve to improve/develop transport infrastructure directly by community participation. The objective of this approach is implementation of small-scale infrastructure schemes in villages by participation of Local Communities for their own benefit through local resource motorization in collaboration with the union Parishad. The level of participation in this case is as follows:

- Selection, prioritisation, planning of local schemes
- Cost staring in small portion, from them for ownership development.
- Supervision in implementation & for quality control
- Maintenance and operation after completion.

The community/community based organization (CBO)/group will innate scheme through the UP. They will contribute 20% of total estimated cost.

Substantial effort has been exerted to disseminate the idea of such an approach that recipients should have to develop their infrastructure from their own resource, not looking towards the government or donors' assistance. This will relieve the community from depending on others, would build ownership, develop self-reliance & to encourage own work in own way & resources.

A remarkable response has been noticed form the rural people to construct small-structures, Bridge/Culverts, HBB road, Markets development, sanitary latrines, Biogas plants, passenger sheds etc.

8.4 NGOs IN RURAL TRANSPORT INFRASTRUCTURE:

In some LGED infrastructure projects the following various programs were assigned to & executed by the NGO's in community development/social aspects which directly benefit the poor:

- Group mobilization
- Life skill education
  -Group saving's
  -Tree plantation
  -Tree care taking
- Credit/Income Generation
- Beneficiary Training
  -Group accounts management

-Participatory leadership development
-Awareness and ownership building
-Gender awareness

In addition to this, NGOs are also involved in mobilisation, and group formation of Labour contracting societies (LCS), in awareness building, in Road safety and road uses. Bangladesh Rural Advancement Committee (BRAC) is also engaged to maintain the rural roads through out the year by destitute and disadvantaged women.

8.5 MAINTENANCE OF RURAL INFRASTRUCTURE

In addition to construction of infrastructure, **maintenance** of roads and bridges/culverts has been given more importance under various projects. Some of the rural development projects are having a component for maintenance but RD projects do not cover all the areas of the country and maintenance activities of the projects are also very limited. LGED in April 1991 formulated a maintenance strategy of rural infrastructure indicating the responsibility of the organizations and institutions to maintain these structures after their construction as well as the way of getting necessary funds and resource mobilization. Moreover, maintenance of roads and bridges/culverts was implemented with allocations from the Revenue Budget of the Government of Bangladesh (GOB). In the current financial year an amount of Tk.1250 million has been allocated from the revenue budget for the maintenance works. A maintenance cell headed by a Superintending Engineer has been created to perform the maintenance activities in a harmonious manner.

RURAL MAINTENANCE PROGRAMME:

The most important project on maintenance implemented by LGED is the Rural Maintenance Programme (RMP). Phase-III of RMP assisted by CIDA is under implementation by LGED and consists of 2 components viz. Road Maintenance Component (RMC) and Income diversification Component (IDC). Under RMC, approximately 82,000 km of rural road is maintained in 4,100 unions by employing 45,000 destitute women, 16.4 million employment days generated by RMP activities throughout the year. Very recently a contract has been signed between LGED and Bangladesh Rural Advancement Committee (BRAC); an NGO, to execute the work of rural maintenance through the year employing, workless, landless, destitute, disadvantaged women. The project would be executed by the assistance of World Food Programme (WFP). This project will ensure food security generating employment for the rootless rural poor.

8.6 ROAD USERS COMMITTEE:

It was felt that road users could play an important role in raising awareness, demonstrating the importance of road improvement & maintenance policies, enforcing the regulatory framework, strengthening accountability and participating in road management. To be effective, they need to be organized into road user associations and should work closely with both road agencies and the government.

Awareness could be raised by explaining the role of roads in economic and social development, the impact of better maintenance on vehicle operating costs and the importance of the road sector in creating income and employment. They might do this through active participation in workshops and seminars, and by promoting public awareness through use of the mass media. To demonstrate the importance of sound road improvement & maintenance policies, road users would need to be assured that the benefits of such policies were passed on to the public (particularly to users of public transport) and that journey times and vehicle emissions were reduced. Conversely, poor road policies would lead to increased vehicle operating costs, which could be passed on to the public.

Road users also have an important role to play in the following areas:

- Facilitating public acceptance of periodic increases in road user charges;
- Supporting reasonable attempts to prevent encroachment and control of land use along the road right of way;
- Raising awareness about the importance of axle weight regulations and helping to enforce them;
- Raising public awareness of road safety and environmental impacts and helping to enforce them;
- Encouraging better vehicle maintenance;
- Strengthening the overall management of roads;
- Facilitating community participation in the planning and implementation of works
- To encourage community ownership of roads;
- In actively participating in a representative management board and other key road sector committees.

9. LABOUR BASED TECHNOLOGY

Labour-based technology is the use and management of locally available human and material resources for the construction and maintenance of infrastructure. It provides a means of construction and maintaining infrastructure using labour supported by light equipment. The objectives are a) to engage the labour directly in labour intensive areas, b) reduce poverty, c) minimise cost, d) reduce time span of construction as work proceeds with readily available labour & equipment.

One of the advantages using labour-based work is that local people are employed and trained in construction and maintenance, this develops skills and also creates employment within the community. The trained people in future play a critical role in maintaining the infrastructure built. In addition to this labour based methods save foreign exchange, and inject cash into the local economy.

This labour base technology is adopted in construction of LGED's transport infrastructure (Roads/Bridges/Culverts) in inaccessible rural areas. In building rural transport infrastructure, all the work operations viz. earth works, haulage, placing, levelling, aggregate breaking, mixing in proportion, placing, connecting, etc. is done by manual labour.

10. RURAL TRANSPORT SERVICE

Many government and donor efforts to improve access to rural transport have focused on expanding road networks, with little attention paid to sustainability, to the need to develop transport means and services on the roads, or to the needs and views of transport users, especially the rural poor. As a result, despite massive spending on road construction, the interventions have not met the transport needs of rural women and men for a wide variety of subsistence, social, and economic activities to maximize their livelihoods. Moreover, the market has not provided transport services to areas with low demand and to the poorest and least mobile sections of the community, Many rural people, especially women, walk long distances every day carrying heavy loads such as water, firewood, grains, agricultural produce, and goods for marketing.

In recent years, however, recognition has grown that without an integrated approach to transport infrastructure and services, investment in transport is unlikely to bring commensurate economic and social benefits. As a result, the time has come to give more attention to smaller roads, paths, and tracks and to the use of intermediate means of transport. Initiatives for local transport solutions include components for complementary infrastructure and transport services. Governments have a responsibility to a create favourable policies and operating environments, enabling the private sector and non-governmental organizations (NGOs) to play important supportive roles in new initiatives.

11. THE RURAL TRANSPORT SYSTEM

All communities require access to supplies, services, facilities, and opportunities. Basic needs include

water, power, food, health services, education, and employment. People need access to markets and may wish to participate in civic, religious, and leisure activities. Accessibility can be measured in time, effort, and cost. It depends on infrastructure (availability of water sources, roads and bridges, schools, hospitals, markets) and available and affordable transport options for people and their loads. Poor rural people often have to spend much time and effort to access basic necessities, and the reduction of isolation and inaccessibility are fundamental of poverty alleviation. Accessibility depends on mobility (ease and frequency of movement) and proximity (distance). Access may be improved by greater mobility and improved proximity to services (piped water, local health centres).

The most basic means of transport involves people walking between locations and carrying things themselves. Walking and carrying are simple, cheap, and efficient for short distance, difficult terrain, and small loads. At the other end of the spectrum are large-scale means of transport, including trucks, buses, automobiles, trains, airplanes, and ships. These are generally designed for moving people and goods quickly over long distances with large loads. These technologies are intrinsically complicated and expensive. Nevertheless, economies of scale can make the cost per tonne-kilometre or per person-kilometre carried quite low, provided operations are efficient and there is high capacity utilization. They have advantage for long-distance transport.

Between these extremes, there is a vide variety of local transport solutions that are intermediate in scale and may involve a variety of different forms of lower technology, Often referred to as intermediate means of transport, they increase local transport capacity and reduce drudgery at relatively low cost. They are most commonly used for relatively short distances of up to 20 kilometres. Some are non-motorized (handcarts, bicycles, animal-powered transport), while others have small motors (motorcycles, power tiller trailers). Equivalent intermediate water-based means of transport include canoes, rafts, and other small boats.

Rural transport depends on appropriate infrastructure (paths, roads, waterways, bridges, railway tracks, and their associated maintenance and traffic management systems). The infrastructure includes paths, trails, tracks, access or feeder roads, secondary roads, and primary trunk roads. These may all vary in quality, depending on weather, season, construction and maintenance, and some means of transport require certain infrastructure standards to operate effectively.

Operating on the transport infrastructure, are a variety of means of transport carrying passengers and freight. These include, trucks, pickups, buses, mini-buses, cars, bush taxis, animal-transport, motorcycles, tricycles, bicycles, and handcarts. These may be for private or commercial use. There is a continuum of arrangements between commercial hire and private use, with many local means of transport being used for both family purposes and informal hire.

Transport infrastructure and transport operations form rural transport systems. Mobility, for men, women, children and goods, depends on the availability, affordability and efficiency of such transport systems. Although mobility is not always productive, improved transport system can increase accessibility, reduce poverty and isolation, and enhance social and economic development.

11.1 STAKEHOLDERS IN TRANSPORT SYSTEM

Rural transport involves many stakeholders with different priorities and agendas. These stakeholders influence the provision, price, quantity, and quality of transport means and services, and all should be included when planning and implementing transport interventions. The main players are users, operator, and regulators. Others include major institutional stakeholders in the public and private sectors (national government, local government, transport agencies, funding institutions, training organizations), transport vehicle suppliers (freight and passenger, large and small scale, formal and informal), supplies of support services (manufactures, importers, retailers, mechanics, and artisans), transport infrastructure contractors (large and small), professional unions and associations, and relevant NGOs.

11.2 LGED'S INTERVENTION IN TRANSPORT SERVICE DEVELOPMENT:

- A lot of effort has been made by LGED to establish, improve and develop efficient the rural transport system which involves a Large and Small-Scale transport modes. Intermediate means of transport are important for on-farm, within village & village to market transport, short urban-periurban transport. To develop/improve NMT/IMT some work has been carried out with World Bank finance under the RRMIP-2 Project - e.g the traditional rickshaws have been transformed to improved rickshaws. The iron plate covered wheels of bullock carts have been converted to rubber tired wheels which are affordable and can be pulled with less effort, also reducing the damage to rural roads. Country boats are converted to powered boats in water transport.
- LGED also disseminates the ideas about different modes of transport: NMT & MT, in different areas of the country learning from home & abroad, through workshops, seminars & also contacting LGB's & CBOs, different transport organizations through Road User's Committees, to achieve efficient, affordable Rural Transport modes.
- Working on policy formulation for the Rural Transport system:

12. FINANCING IN TRANSPORT SYSTEM IN BANGLADESH:

Investment in rural infrastructure is financed from several sources; the resources of the UPs, the Annual Development Program (ADP) grants from Central Government to UPs, foreign funding and Food for Work and related programs. UPs generate only limited income from a small number of local taxes. The ADP grants amounted to Taka 1.5 billion in FY 94-95, and Taka 2.0 billion in FY 95-96, of which a portion is pre-assigned for infrastructure. Centrally administered Rural Development Projects (RDPs), with significant contributions of foreign funding, are the principal source of funds for rural infrastructure; another source of funding is Food Aid but this is increasingly and justifiably redirected towards maintenance.

13. PHYSICAL PLANNING & QUALITY CONTROL ACTIVITIES IN LGED

Upazila and Union Plan Books have been developed by LGED to guide the physical planning process at the local level. LGED is the pioneer organization in establishing GIS through which it has been possible to digitise and prepare base maps of all 460 upazilas of Bangladesh. The in-house GPS supported GIS capabilities are being utilized in planning of LGED's infrastructure

14. DEVELOPMENT IMPACT OF RURAL INFRASTRUCTURE

Various study reports have indicated positive developmental impacts of rural infrastructure. The Study Report of the International Food Policy Research Institute (IFPRI) and the Bangladesh Institute of Development Studies (BIDS) on Developmental Impact of Rural Infrastructure in Bangladesh, October 1990 contains the following major findings:

- Development of rural infrastructure has far-reaching implications for the alleviation of poverty by indirectly generating income.
- Infrastructure affects agricultural production indirectly through prices, diffusion of technology and the use of inputs.
- Fertilizer prices are 14 percent lower and labour costs 12 percent higher in villages having access to better infrastructure facilities.
- Infrastructure development is estimated to have increased agricultural production in developed areas by as much as 32 percent.
- Infrastructural endowment causes household income to rise by 33 percent income, from agriculture increases by about 24 percent, that from livestock and fisheries by about 78 percent, that from wages almost doubles and income from business and industries rises by 17 percent.
- Infrastructure development has a positive effect on health.

The report of the Bangladesh Institute of Development Studies (BIDS) on Rural Poverty Update, 1992 published in 1993 indicates the following on Infrastructure and its Impact on the Rural Labour Market:

- Infrastructure development increases the demand for labour via its positive impact on agriculture, industry and services;
- Villages with developed infrastructure are also villages with higher level of agricultural modernization;
- With the development of infrastructure, total labour supply in self employment in the non--farm sector (particularly in trade and business) increases by about 20 percent compared to villages with under-developed infrastructure;
- Total earnings as-well as employment of poor households were found substantially higher in infrastructurally developed villages compared with under-developed villages.

Wage employment per household in the occasional deficit group is higher by about 36 percent in villages with developed infrastructure compared with under-developed villages.

BIDS-WB report on Stimulating Growth through Rural Non-Farm Activities in Bangladesh, 1996

- Improvement in physical infrastructure is considered to be one of the most critical supportive elements for development of rural non-farm enterprises.
- Growth in Rural Non-Farm Activities was observed in places well connected by all weather roads and having supply of electricity
- Improvement in physical infrastructure allowed greater integration of product and factor markets

15. INTERNTIONAL APPRECIATION FOR LGED

Both users and development partners have rated LGED as one of the efficient and effective Government organizations. Impressed by the LGED's development model, Nepal has started a department similar to that of LGED. The World Bank Report March 1996 indicated that decentralization, professionalism, monitoring system, informal decision making, leadership, team work and sense of mission are the mainstream of LGED's successful operations. LGED's vision is the capacity building of LGED contractors, private sector, local government institutions, and beneficiary groups for planning, implementation, operation and management of infrastructure development activities.

16. CONCLUSIONS

- Rural transport plays vital role in alleviating poverty of rural poor.
- Improving rural mobility to reduce poverty requires a combination of appropriate transport infrastructure and better transport services using affordable means of transport.
- Stake holder participation & demand-led activities will enhance sustainability of the transport system.
- Government policy, sharing the responsibility of different agencies, Local Government bodies, should be clearly defined.
- In Bangladesh LGED is pioneer in improving mobility for the rural poor, establishing/developing rural accessibility.