FINANCING RURAL FEEDER ROAD MAINTENANCE IN BANGLADESH : TOWARDS A SUSTAINABLE APPROACH

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abstract : Maintenance of the rural roads is a prerequisite, *inter alia*, to protect investment made and to maximize return on investment. The main problem of rural road maintenance is not technical but financial and management. Bangladesh in the past has not paid attention to planned road maintenance. The paper throws some light on the current financing arrangements of rural feeder road maintenance in Bangladesh and raises some issues towards achieving a sustainable solution. Although achievements of Bangladesh in this regard are laudable, more efforts are needed to achieve a sustainable solution. Financing rural feeder roads maintenance is a continuous challenge; strong will of the policy makers along with the ability to re-adjust with the changing socio-political situations are the key.

1. INTRODUCTION

Overwhelming majority of the population of developing countries live in rural areas. Adequate, reliable and economic means of transport is a prerequisite for overall rural development and for access to different facilities to rural residents in order to carry out different activities. Several empirical studies in the 80s and in the early part of 90s examined the effect of improved transport infrastructure on the socio-economic development of developing countries and supported the hypothesis that transportation infrastructure and services are critical for productive activity in developing countries (Creightney, 1995). One such study conducted in Bangladesh found that that infrastructure could boost household's income by 33 percent; small farmers gather the major share of the income rise from the increased production of crops, wages and livestock and fisheries (Ahmed and Hossain, 1990). Therefore, there are sufficient evidences to support the hypothesis that "well planned" transport infrastructure intervention can have profound positive socio-economic effect on the rural population.

Maintenance is an essential follow-up action after road infrastructure improvement investment. A well-planned road infrastructure maintenance programme is necessary to: (i) provide comfort, convenience and safety to public; (ii) protect investment in roads. For example, in Africa nearly third of the $150 billion invested in roads has been eroded due to lack of maintenance (Heggie, 1995) (iii) minimize further investment in the roads deteriorated due to lack of maintenance. For example, in Africa at least US$1.5 billion per year will be required for next ten years to restore those roads which are economically justified for rehabilitation and to protect further deterioration due to lack of maintenance (Heggie, 1995); (iv) maximize return on road investments. One study found that each dollar saved on road maintenance increases vehicle operating costs by $2 to $3 (Heggie, 1995);

and (v) preserve or enhance the aesthetic and compatibility of road system with environment. Heggie (1995) quoted one study carried out for the 1994 *World Development Report* which found that the average Economic Internal Rate of Return (EIRR) for road maintenance and rehabilitation projects was 38.6 percent.

In spite of clear economic benefit of maintenance of transport infrastructure inadequate funds are being allocated for such purpose. Data on road maintenance of some African countries shows that percentage of actual to required fund allocation ranges from as low as 12% (Zambia) to 73% (Zimbabwe) (Heggie, 1995). Construction of road over their maintenance is preferred in developing countries due to: (i) "Planned maintenance" is not visible, i.e. if the road is in serviceable condition then the efforts for maintenance are not appreciated. This is why the capital budgets for road construction is politically more easy to obtain than the recurring expenditure of road maintenance; (ii) Impact of maintenance negligence is not immediate. This is why there is a tendency of putting off this activity until the infrastructure reaches a condition needing rehabilitation; and (iii) Apathy towards maintenance on the part of the road department as they have more interesting things to do - road building. It is imperative to mention here that due to the paucity of adequate funds for road maintenance, preference is given to the maintenance of national/regional highways leaving the rural roads in appalling condition.

Due to the lack of "planned maintenance" initiative, rate of deterioration of road network in developing countries is faster than the rate of construction (Edmonds, 1989). Edmonds (1989) also confirmed that the funds allocated for maintenance are actually spent on improvement and emergency works rather than on routine maintenance. Hence, the Public Works Departments are caught in a vicious cycle. In the backdrop of the above, in the recent past, the United Nations Economic Commission for Africa (UNECA) and the World Bank under the auspices of the Sub-Saharan Africa Transport Program (SSATP) launched the Road Maintenance Initiative (RMI) to identify the underlying causes of poor road maintenance policies and to develop an agenda for reforming them. Much of the awareness on the importance of road maintenance - including rural roads - came from the aforementioned initiative.

It is now widely accepted that the main problem of rural road maintenance is not technical but financial and management (Kapila, 1989; Economic Development Institute, 1985). This paper throws some light on the current financing arrangements of rural feeder road maintenance in Bangladesh and raises some issues towards achieving a sustainable rural feeder road maintenance financing in the context of Bangladesh.

The following sections describe infrastructure/transport development in Bangladesh; rural feeder road maintenance requirements in Bangladesh, rural road maintenance financing in Bangladesh; and opportunities and constraints in rural feeder road maintenance financing in Bangladesh.

2. RURAL INFRASTRUCTURE/TRANSPORT DEVELOPMENT IN BANGLADESH

Roads of Bangladesh are divided into seven categories - National Highway, Regional Highway, Feeder Road type-A (FRA), Feeder Road Type-B (FRB), Rural Road Class 1 (RR1), Rural Road Class 2 (RR2) and Rural Road Class 3 (RR3). The National Highways,

Regional Highways, and FRA are the responsibility of Roads and Highways Department (RHD) under the Ministry of Communications, while the responsibility of FRB, RR1, RR2, RR3 lies with the Local Government Engineering Department (LGED)of Ministry of Local Government, Rural Development and Co-operatives in collaboration with the local government bodies (World Bank, 1995a). Definition of road categories is presented in Table 1 (Local Government Engineering Department, 1995a). It is to be noted here that although classified as road, the RR3 roads are no more than foot paths within villages.

Table 1: Road Network Classification

Category	Definition
National Highways	Road connecting national capital Dhaka with Divisional headquarters[1], and other important urban centres, ports, and international highways.
Regional Highways	Road connecting different regions with each other, which are not connected by national highways
Feeder Road Type - A (FRA)	Road connecting the Thana Headquarters to the arterial road network
Feeder Road Type - B (FRB)	Road connecting growth centres to the RHD network (FRA or arterial road) or to the Thana Headquarters
Rural Road Class 1 (RR1)	Road connecting the Union Headquarters/ local markets with the Thana Headquarters or road system
Rural Road Class 2 (RR2)	Road connecting villages and farms to local market/Union Headquarters
Rural Road Class 3 (RR3)	Roads within villages

One of the three major components of a rural development project as identifies in the Rural Development Strategy of the government in 1984 is the development of physical infrastructure which includes roads, storage and markets (Bangladesh Planning Commission, 1984). Government has given emphasis for the development of FRBs and RR1s along with the construction of bridges and culverts.

Figure 1 shows the historical trend of expenditure for development and maintenance of rural infrastructure (FRB, rural roads and growth centres) in Bangladesh (World Bank, 1995a). It can be seen from Figure 1 that in the FY1995-96 an investment of the tune of Taka 6755 million (US$169 million) was made for rural infrastructure development. It can be seen from Figure 1 that from FY1991-92 there was a substantial rise of project-aid (in the last five years 66% of the total expenditure) from donors as well as of total expenditure on infrastructure development and maintenance. Most of the improvement expenditure are used for new construction of structures, rehabilitation and black topping of roads (World Bank, 1995a). This will have a significant impact on the future maintenance requirement - both routine and periodic.

[1] Highest demarcated administrative units. The administrative hierarchy in Bangladesh in order of size is Division, District, Thana, Union and Mauza.

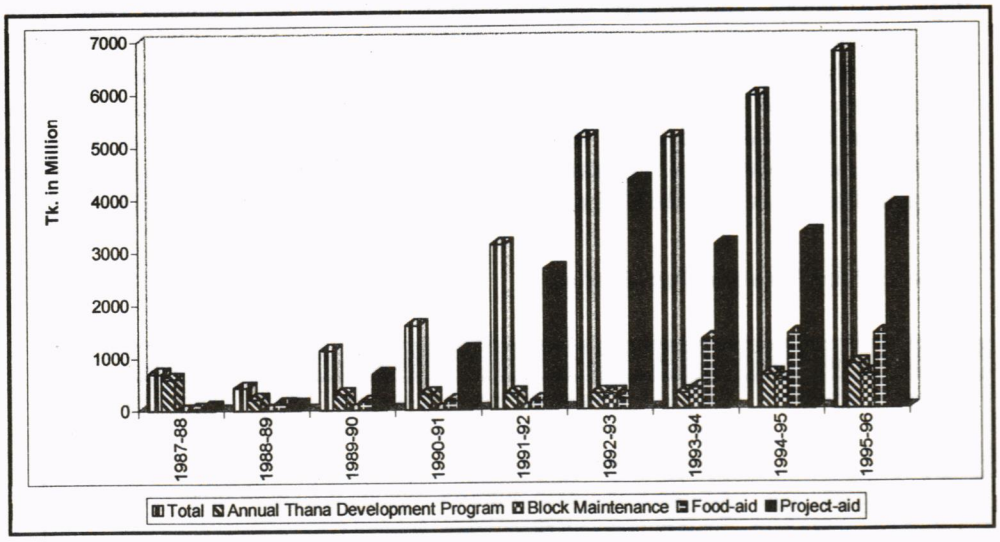

Figure 1 : Historical Trend of Rural Infrastructure Expenditure

3. RURAL FEEDER ROAD MAINTENANCE REQUIREMENTS IN BANGLADESH

Good quality road development in Bangladesh is difficult due to the physio-geographical condition - a country comprised of flat alluvial plains crisscrossed by a large number of rivers and water courses is extremely flat and low-lying. Many of the soils have poor engineering characteristics and availability of construction material particularly aggregate is scarce. The flat terrain, high rainfall and annual flooding means roads must be built on substantial embankments with many cross-drainage structures. Many rural roads are also built under food-for-works schemes, with no funds for compaction. These factors requires added maintenance expenditure. Apart from these, as mentioned earlier Bangladesh is quite often struck by natural calamities. In such case, there is an extreme burden on the poor economy for emergency maintenance.

With the construction of rural roads the transport characteristics is undergoing change in almost all the rural roads. For example, in 9 FRBs of a World Bank assisted project there was an increase of about 50% of motorized transport (Development Design Consultants Limited, 1995). In case of non-motorized transport (NMT) similar figure is 175%. These change in modal-mix requires special attention for maintenance of those roads for their use in a safe and economic way.

It can be seen from Table 2 that only 32% of the existing FRBs has so far been surfaced either by Herring Bone Bond (HBB) or Water Bound Macadam (WBM) or Bituminous Carpeting (BC). In case of other rural roads, overwhelming proportion is yet to be surfaced with any type of surfacing. In the next 10 years, it is planned to improve 80% of FRBs and 10% of RR1 roads to all-weather standard (World Bank, 1995a). This will have quite significant impact on the resource requirements for maintenance of rural roads in the years

to come. Figure 2 shows that majority of the FRBs, RR1s and RR2s are either in average or poor condition.

Table 2 : Road Length by Type of Surfacing

Category	Length by Surface Type (Kms.)								
	Total	Earth		HBB		WBM		BC	
	Kms.	Kms.	%	Kms.	%	Kms.	%	Kms.	%
FRB	15524	10582	68%	2254	15%	340	2%	2348	15%
R1	44782	41667	93%	2010	4%	295	1%	810	2%
R2	48327	47634	99%	516	1%	49	0%	128	0%
Total	108633	99883		4780		684		3286	

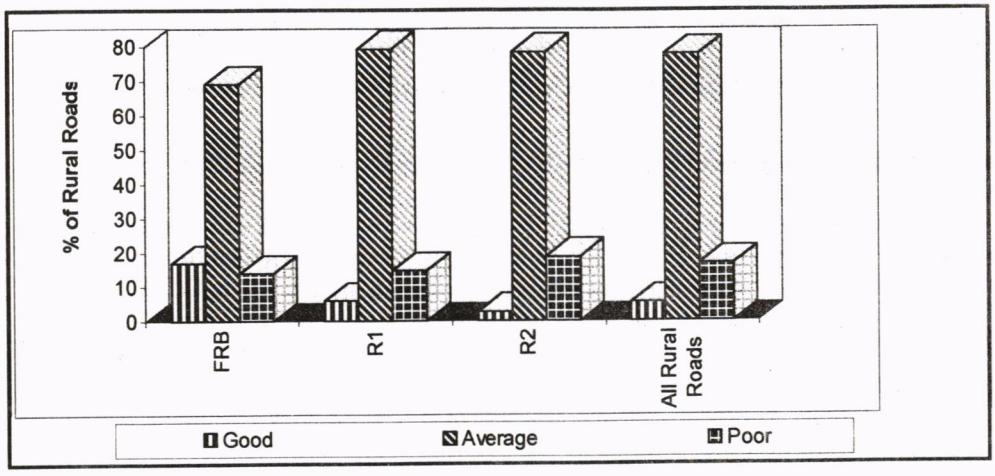

Figure 2 : Physical Condition of Rural Roads in Bangladesh (World Bank, 1995a)

Figure 3 shows the resources requirement of planned maintenance of rural feeder roads in Bangladesh[2]. It can be seen that in the FY1995-96 in 1995-96 there was a requirement of Taka 1269 million (US$32 million) for rural feeder road maintenance in Bangladesh. Similar figure for FY2003-2004 is Taka 2303 million (US$58 million).

[2]cost of maintenance of earthen RR1s and RR2s is not included

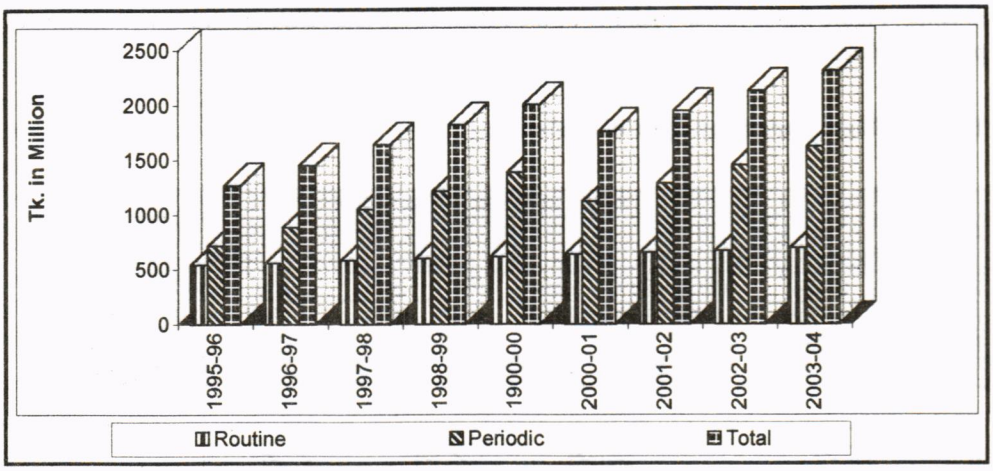

Figure 3: Cost of Planned Maintenance of Rural Road Network under LGED

4. RURAL ROAD MAINTENANCE INITIATIVES IN BANGLADESH

Like many other developing countries, Bangladesh in the past has not paid attention to planned road maintenance (Local Government Engineering Department, 1995a). Lack of maintenance initiative was mainly due to poor maintenance culture coupled with unsound macro economic situation. In the recent past initiatives had been taken for planned road maintenance - both routine and periodic. Understanding implication of non-maintenance of the planned infrastructure, two seminar/workshop was arranged - one in 1989 and the other in 1992 - in order to apprise different actors related to rural infrastructure development - different ministries and departments of the government and donors - about the emerging danger of non-maintenance. These initiatives was instrumental in breaking the poor maintenance culture of rural feeder roads in Bangladesh.

Figure 4 shows the historical trend of maintenance and improvement expenditure for rural infrastructure (feeder rural roads and growth centres) in Bangladesh. It can be seen from Figure 4 that there is substantial improvement in maintenance funding from the FY1992-93. In the FY1992-93, government for the first time allocated Taka 300 million (US$7.5 million) from its General Tax Revenue for the maintenance of rural infrastructure. In the subsequent years such allocation has gone up significantly - in the FY1993-94 Taka 400 million (US$10 million); in the FY1994-95 Taka 550 million (US$13.75 million); and in the FY1995-96 Taka 650 million (US$16.25 million). Improved macro economic situation[3] and improved understanding on the needs for planned maintenance of rural infrastructure is responsible for such a positive trend.

As a part of the "planned maintenance", a Rural Infrastructure Maintenance Cell (RIMC) has been set up in LGED by the government in the early 90s. Rural Maintenance cell has made considerable progress in establishing the framework for road maintenance by setting up a road inventory system, introducing national maintenance guidelines and establishing a training programme (LGED, 1995a). Government with the assistance of ILO/UNDP

[3]Bangladesh is currently financing 40 percent of the expenditure of Annual Development Plan (ADP) from indigenous sources which was negligible few years ago (Chowdhury, 1995)

already prepared Thana Base Maps - contain spatial information of administrative boundaries, physical infrastructure (including roads), educational institution, settlement pattern and other agriculture and socio-economic infrastructure - of all Thanas using Satellite Imagery, aerial photography, available topographic maps and ground truthing with the help of technical staffs of LGED at the Thana level. Acquisition of digital data from the Thana Base Maps using Geographic Information Systems (GIS) in different layers has also been completed. These spatial data with related attribute data are increasingly being used for planning of rural infrastructure including maintenance planning of rural feeder roads.

Donors' role in rural infrastructure maintenance financing is not substantial as it has been visualized by the donors that after the completion of project maintenance is government's responsibility. Donors' role is limited to the maintenance of project rural feeder roads within the project period. A total of Taka 147 million (US$3.7 million) will be spent under different donor assisted projects for rural feeder road maintenance in the FY1995-96.

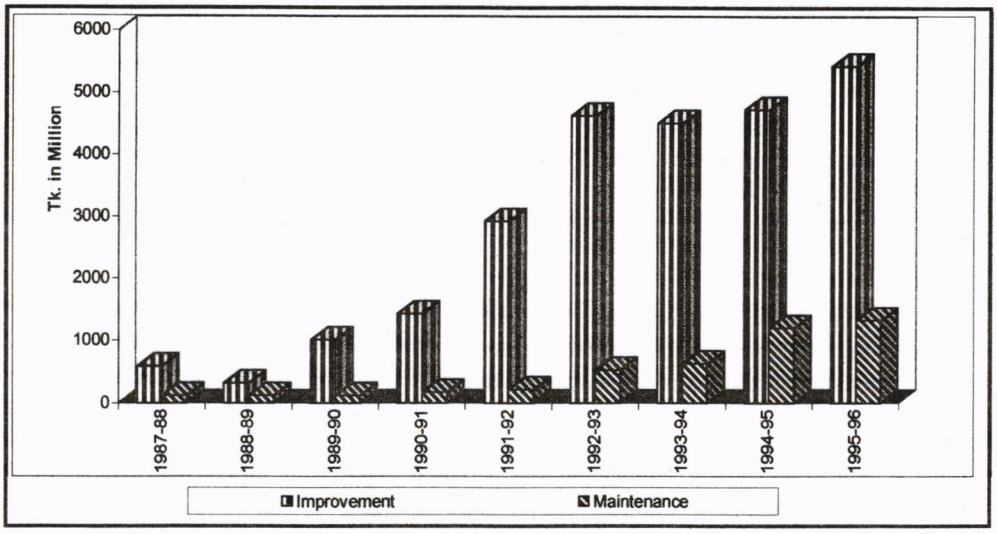

Figure 4 : Historical Trend of Maintenance and Improvement Expenditure

It is worth mentioning the maintenance model of a Canadian Intentional Development Agency (CIDA) assisted rural earthen road maintenance project - Rural Road Maintenance Programme (RMP). The project is jointly implemented by LGED and an international NGO called CARE International. The project will maintain 72,000 kms. of economically viable and important Union-level rural roads and will employ about 36,000 destitute rural women (hereinafter referred as "maintenance crew") in 3600 Unions using lengthperson system (Government of the People's Republic of Bangladesh and CARE International, 1995). The project has two components - Rural Maintenance Component (RMC) and Income Diversification Component (IDC). Canadian Government is providing the salary of the maintenance crews on a sliding scale - 80% in the first year (FY1995-96), 75% in the second year and 65% in the third year. 10% of the costs are borne at the local level to signal their financial stake. Government of Bangladesh's contribution in the project is on a reverse scale - 10% in the first year; 15% in the second year; and 25% in the third year. The salient features of the project are the following (Government of the People's Republic of

Bangladesh and CARE International, 1995): (i) it targeted the poorest of the poor women for such maintenance work; (ii) it envisages to make the maintenance crews self reliant thorough appropriate intervention and their release from the programme in a phased manner; (iii) it provides a framework for gradual shifting of responsibility to the government for maintenance of rural earthen roads; and (iv) it encourages local resources mobilization at the Union level by imposing matching contribution from the Union Councils. But Blair (1989) argued that although in the previous phases there was a provision for matching local resource at the Union level, a good majority of the Union Councils could get away with this obligation by contributing from the central government's grant without raising local resources. Quddus (1995) argued that although the earlier phases had two components, there were undue emphasis on the income diversification component at the expense of rural maintenance component.

5. OPPORTUNITIES AND CONSTRAINTS IN RURAL FEEDER ROAD MAINTENANCE FINANCING IN BANGLADESH

It has been seen earlier that there had been considerable improvement in financing rural feeder roads maintenance in Bangladesh since early 90s. In the FY1996-97 there was a requirement of Taka 1451 million (US$36 million) for rural road maintenance in Bangladesh. An analysis shows that in FY1996-97 resource requirement for maintenance is closely matched with the resources available - Tk. 1300 million (World Bank, 1995a). Majority (some 60%) of the maintenance fund is provided from government's General Tax Revenue.

Now the question is whether the government will be able to bridge the gap of currently required and available amount for maintenance of rural feeder roads as well as financing the increase maintenance needs due to anticipated future improvements. Question also is what will happen when CIDA withdraws support for routine maintenance of RR1s and RR2s. Providing complete answers to the above questions is outside the scope of the paper. The following sections discuss the existing and potential opportunities available and constraint to be faced for sustainable rural road maintenance financing in Bangladesh.

5.1 Existing Opportunities in Financing Rural Feeder Roads Maintenance

The following opportunities already exists in Bangladesh in terms of rural feeder road maintenance financing :

(i) *Existence and use of labor-based maintenance techniques involving landless groups and in particular women* : Labor-based technology is used for routine and periodic maintenance of rural feeder roads. All maintenance works of rural feeder roads are carried out by destitute women/landless labor groups called Labor Contracting Societies (LCSs) except where there is a need for superior skill and equipment. In the latter case small contractors are being used (Local Government Engineering Department, 1995b). The choice of the labor based technology is helping to create short term direct employment opportunity for poorest of the poor and in particular women. This is in line with the government's goal in the perspective plan. It has been suggested by Carapetis, Levy and Wolden (1991) that for up to $4.00 daily labor cost labor-based maintenance techniques is economical. As mentioned earlier average

wage of a labor in Bangladesh is well below the amount mentioned. Hence, there exists substantial savings in labor costs in rural feeder road maintenance;

(ii) *Absence of force account operation*: As discussed earlier, maintenance of rural feeder roads in Bangladesh are being done by local contractor/LCS. In the absence of force account substantial efficiency has been achieved which results in a considerable savings of fund;

(iii) *Allotment of considerable General Tax Revenue for rural feeder road maintenance in recent years* : Starting with Taka 300 million in the FY1992-93, already there is an increase of more than 100% in the FY1995-96 of the amount allotted in the FY1992-93. Improved macro economic situation owing to structural adjustments and increasing awareness among the policy makers about the importance of maintenance of rural feeder roads are responsible for such positive changes;

(iv) *Clear division of responsibility among government's different public works organization for road network improvement and maintenance* : Unlike many other developing countries there is a clear division of responsibility for road network improvement and maintenance as discussed in Section 2.0. This facilitates the maintenance management of the aforementioned roads;

(v) *Decentralized planning and management responsibility* : LGED - which is responsible for rural feeder roads has offices at the Thana level with planning and management responsibility of rural feeder roads maintenance;

(vi) *Involvement of local government bodies with added responsibility* : Although LGED is responsible for improvement and maintenance of rural feeder roads, steps have already been taken to involve local government bodies, especially the Union Councils in order to ensure participation of local people in improvement and maintenance of rural feeder roads (Local Government Engineering Department, 1995b; World Bank, 1995b); and

(vii) *Steps already taken to augment local resources* : Several steps have already been initiated to augment local resources mobilization, like, reducing central government's share of market lease revenue and allowing this amount to go directly to Union Council, diverting half of the land-transfer-tax revenue now going to District Councils to Union Councils, increasing lease value threshold for Union Council managed markets; introduction of more transparent procedure for market leasing in order to reduce collusion in market leasing; and enhancing unit tool rates for developed markets. These measures are expected to increase the local revenue income of the Union Councils substantially.

5.2 Potential Options in Rural Feeder Road Maintenance Financing

5.2.1 Local Resources Mobilization

Ratio of total taxes to gross domestic product in Bangladesh is consistently less than in other less developed countries. Bangladesh has a tax-GDP ratio of 7.1% far below the average of all developing countries (19.5%) (Chowdhury, 1995). In Asia alone similar

figure is 14.9%. In rural Bangladesh the situation is even worse - urban households pay about two and half times more taxes on their income than their rural counterparts despite the fact that there are good number of rural households with good income from agriculture and/or business or from other sources who should pay taxes on equity ground (Blair, 1989). The fact is that the local rich and influential people are unsurprisingly reluctant to be taxed. Blair (1989) argued that the rich and influential people are worst evaders and defaulters of paying taxes. Not only they evade in paying taxes but also they further their interest in different areas at the expenses of community public welfare irrespective of local government structure. For example, in case of leasing of markets, ferry *ghats* and water-bodies, collusion among the bidders - generally from the rich and influential people - along with the officials is found common which keeps the price of lease at an artificial extraordinary low level (Blair, 1989). Local government bodies suffer from narrow tax base, insufficient attention of the government and inability to collect taxes. There are plenty of opportunities in local resources mobilization but what is required is collection efficiency and equity.

To overcome the aforementioned situations there needs a very strong political will. Possibly it will be unwise politically for the government to go for quick reform which will touch the power base of the rural elites. What is preferable is to go for change more slowly but with specific objectives. Following potential measures along with other measures could be taken to augment the local resources at the Union level which can in turn enhance the capacity of the Union Councils in rural feeder road maintenance :

(i) It has been reported by Blair (1989) that local bodies pay their matching contribution for different projects from the central government's grants fund. This system needs to be tightened up by making the local government to pay their matching share from their collected revenue. This will help in augmenting local resources collection;

(ii) Government's grants could be used in order to pursue its policy objectives. For example, in addition to the normal grant, if the government match a dollar for an extra dollar spent on maintenance of rural roads this may encourage the local government to collect more taxes and on the other hand it will serve the purpose of much needed rural roads maintenance.

(iii) Blair (1989) comments that even if the local government are interested in mobilizing local resources there is no real institutional structure through which it can collect and spend the same. The current staff strength of the Union Councils is not conducive enough for local resources mobilization and their spending. Detail discussion of this issue is outside the scope of the paper, but steps may be taken to look into the staff requirements for the Union Councils in order to cope with the added responsibility conferred upon them due to the recent reorientation of the local government structure.

(iv) Ensuring local participation in the planning, designing and implementation of rural infrastructures. For example, in the World Bank/SDC assisted Second Rural Road Improvement and Maintenance Project (RRMIMP-2) provision has been kept for community participation in planning, designing and implementation of some rural infrastructure. In one of the components of the project - Structures on Rural

Roads (SRR) - there is a provision of mandatory contribution of Union Councils (ranges from 10-20% of the estimated cost) in case of structures proposed by them to ensure their participation. Although it is quite early to comment on the effectiveness of the aforementioned steps but a it may help to guide the future policy regarding improvement and maintenance of rural infrastructure.

5.2.2 General Tax Revenue

As discussed earlier, in Bangladesh, a overwhelming part of the resources needed for maintenance of paved rural feeder roads comes from the General Tax Revenue of the government. Although its increment since its inception in the FY1992-93 is encouraging, the question is whether the government will be able with its General Tax Revenue to bridge the gap that exists between the required resources and the available resources for maintenance of rural feeder roads and at the same time increase the additional resources required due to the future rural feeder road improvement. There are certain advantages and disadvantages of the General Tax Revenue which are pointed out below:

Advantages

- It conforms with the unified budget management.
- It is politically more acceptable.

Disadvantages

- It does not represent users cost.
- It is susceptible to macro economic situation.
- As it is dependent on the macro economic stability of the government it is difficult to forecast well ahead about the availability of such fund hence its makes planning more difficult.
- It is generally not preferred by the policy makers as it comes from the revenue budget rather than the development budget.

5.2.3 Road Fund

Roads funds have been set up in several African countries in order to ensure stable flow of fund for operation and maintenance of road infrastructure[4] (de Richecour & Heggie, 1995). Some of them were set up also to finance transport studies, road safety programmes, road rehabilitation and new investment. The first Road Fund in Africa was set up in South Africa in 1935 and the reminder were established in the 80s and 90s (de Richecour & Heggie, 1995). Road Fund derives its revenues from road users charges - mainly fuel levy, bridge and ferry tools and an earmarked portion of other taxes and charges. The Road Funds are special account held either at a Central Bank or a commercial bank. Establishment of Road Fund in Bangladesh may be an option for operation and maintenance of rural feeder roads.

[4] for operational detail of road fund please refer de Richecour & Heggie (1995)

However Road Fund has the following advantages and disadvantages which are to be considered before establishment of Road Fund in Bangladesh:

Advantages

- Easier to earmark the funds exclusively for operation and maintenance of roads.
- Logically more preferable as the users of the system paying for their use.
- Less chances of invasion in case of national emergency. For example, in case of natural disaster, there is less chances of maintenance funds being re-directed if some portion of the fund is set aside for emergency maintenance.
- Less susceptible to macro economic situation. In the case of a country with unstable macro economy there is less probability of the maintenance budget being reduced due to its earmarking for maintenance of roads.
- Preferred by policy makers as it comes from development budget rather than revenue budget.

Disadvantages

- Politically less acceptable as raising of taxes on fuel could trigger protest from the users. Hence it needs strong political will for the introduction of the Road Fund.
- It introduces fiscal inflexibility.
- It is against the principle of unified budget management.
- In the case of Road Fund managed by "road board"[5] it needs specific legal provision.
- Procedure of allocation of funds among government's different public works departments could be cumbersome.
- it is difficult to assess the amount of fuel used by the road users. For example, apart from mechanized road transport, irrigation pumps and mechanized river/water transport also use diesel fuel.

5.3 Conclusions on the Opportunities and Constraints in Rural Feeder Road Maintenance Financing in Bangladesh

There has been considerable improvements in the financing of rural feeder roads maintenance in Bangladesh since early 90s. An analysis shows that current resource requirement for maintenance is closely matched with the resources available. Question is whether the future maintenance financing requirements arising due to the needs for up-

[5] a board which oversees management of road fund.

keeping the current stock and improvements anticipated in future can be made or not. Several opportunities already exist in Bangladesh in this regard. These are : existence and use of labor-based maintenance techniques; absence of force account operation; allotment of considerable General Tax Revenue for rural feeder road maintenance in recent years due to increased understanding of the policy makers about the consequences of non-maintenance of roads; existence of clear division of responsibility among government's different public works organizations for road network improvement and maintenance; decentralized planning and management responsibility; involvement of local government bodies with added responsibility; and steps taken to augment local resources.

Several potential options for rural feeder road maintenance financing exit in Bangladesh. These are : considerable opportunities for local resource mobilization compared to other countries; increased allocation from government's General Tax Revenue; and creation of Road Fund. Of them, creation of Road Fund along with the local resource mobilisation is the most viable option as the increased allocation from General Tax Revenue as it is susceptible to macro economic situation of the country.

6. CONCLUSIONS

Although like many other developing countries, Bangladesh in the past has not paid attention to planned rural road maintenance, achievements in the context of rural feeder road maintenance financing in recent times are laudable. More efforts is still needed to achieve sustainable solution to rural road maintenance financing of present stocks and planned improved stocks of rural road infrastructure. Although Bangladesh has some existing and potential advantages but she has to encounter several disadvantages as well in this regard. There is no panacea in achieving sustainable solution of rural road maintenance financing as it is dependent on host of variables. Financing rural feeder roads maintenance in a sustainable way is a continuous challenge; strong will of the policy makers along with the ability to re-adjust with the changing socio-political situations are the key to attain it.

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