IPPG Programme Office, IDPM,
School of Environment & Development
University of Manchester
Harold Hankin Building, Precinct Centre
Oxford Road, Manchester M13 9PL
Telephone 0161 306 6438
Fax 0161 273 8829
www.ippg.org.uk

The Role of Organizations in the Growth of the Rural Non-Farm Sector in Banglasdesh

The Case of LGED

Atiur Rahman,
Taiabur Rahman
and Taifur Rahman[A]

Discussion Paper Series Number Eleven
June 2007

A UNNAYAN SHAMANNAY, 2/E/1-B Mymensingh Road, Shahbag, Dhaka 1000, Bangladesh; Tel: 088-02-8610332, 8622320, 8650015 Fax: 088-02-8622320; E-mail: atiur@sdnbd.org, shamunnay@sdnbd.org; Website: www.shamunnay.org

Paper prepared for the DFID-funded Research Programme, Institutions and Pro-Poor Growth (IPPG). The authors are grateful to DFID for the funding that made this research possible. The views expressed in this paper are entirely those of the author and in no way represent either the official policy of DFID or the policy of any other part of the UK Government.

Contents

Acronyms

ADB	Asian Development Bank
BBS	Bangladesh Bureau of Statistics
BIDS	Bangladesh Institute of Development Studies
BRDB	Bangladesh Rural Development Board
BUET	Bangladesh University of Engineering and Technology
FGD	Focus Group Discussion
FRB	Feeder Road B
GC	Growth Centre
GDP	Gross Domestic Product
GIS	Geographic Information System
GMC	Ghat Management Committee
GOB	Government of Bangladesh
HBB	Herringbone Brick
ICT	Information and Communication Technology
KII	Key Informant Interview
LCS	Labour Contracting Society
LCS	Labour Contracting Society
LGD	Local Government Division
LGEB	Local Government Engineering Bureau
LGED	Local Government Engineering Department
LGI	Local Government Institution
MFI	Micro Finance Institution
MMC	Market Management Committee
MoLGRD&C	Ministry of Local Government, Rural Development & Co-operatives
NGO	Non-Government Organization
OJT	On-the-Job Training
PIC	Project Implementation Committee
PRA	Participatory Rural Appraisal
RD&I	Rural Development and Institutions
RDEC	Rural Development Engineering Centre
RESP	Rural Employment Sector Programme
RIMC	Rural Infrastructural Maintenance Cell
RMP	Rural Maintenance Programme
RNA	Rural Non-Farm Activities
RNF	Rural Non-Farm
RRMIMP	Evaluation of the Rural Roads and Market Improvement and Maintenance Project
RRWS&H	Physical Planning, Water Supply and Housing
RUC	Rural User's Committee
RWP	Rural Works Programme
SP	Sub-Project
SPV	Solar Photovoltaic System
SSWRDSP	Second Small-Scale Water Resource Department Sector Project
TE	Thana Engineering
TIP	Thana Irrigation Programme
TU	Training Unit
UDCC	Upazila Development Co-ordination Committee
UNO	Upazila Nirbahi Officer
UPC	Union Parishad Complex
VDP	Village Defense Party
WMCA	Water Management Co-operative Association
WPW	Works Programme Wing
XEN	Executive Training

1. INTRODUCTION

1.1 Rural Poverty in Bangladesh

About three-quarters of the people of Bangladesh live in rural areas. Incidence of poverty in the country generally, is quite high – about 40% of people live below the (upper) poverty-level1 – and incidence of extreme poverty is higher in rural areas. Some 44% of people live below the poverty line in rural Bangladesh (BBS, 2005), and incidence of extreme/hardcore poverty in rural areas is 29.3% (see table 1). Hence, poverty reduction and improving the livelihoods of the rural poor is an important part of the agenda in the development policy in Bangladesh. From this point of view, pro-poor growth is something that Bangladesh has been striving for since its independence with the on-going poverty reduction strategy also keeping it central.

Table 1: Head Count Rate (CBN) of Incidence of Poverty

Residence	Upper Poverty Line		Lower Poverty Line	
	2005	2000	2005	2000
National	40.0	48.9	25.5	33.7
Rural	43.8	52.3	29.3	37.4
Urban	28.4	35.2	13.7	19.4

Note: CBN=Cost of basic needs.
Source: BBS (2005).

1.2 'Overall' vs. 'Pro-poor' growth in Bangladesh

It is important to distinguish between 'overall' growth (alternatively termed as 'growth in general' or 'ordinary growth') and 'pro-poor growth', as various income and social classes participate in the growth process differently deriving differential benefits from it. The two terms are often used interchangeably with the underlying premise that development, defined in whatever ways, primarily works through the mechanism of economic growth (Sen et al, 2004). However, empirical evidence shows that the rate of pro-poor growth is not the same as the average rate of growth (DFID, 2004).

Ravallion (2004) suggests a convenient framework for understanding 'pro-poor growth' as distinguished from 'ordinary growth'; and based on this framework, Sen et al (2004) try to estimate the rates of pro-poor growth in Bangladesh, which suggest that in comparison to the overall rate of growth, the rate is less in Bangladesh than in India and China. The figures also suggest that the rate of pro-poor growth has been considerably higher in rural areas than in urban areas, implying a better distributional effect of growth in rural areas compared to the urban. Sen et al (2004) also try to estimate growth incidence curves for rural and urban areas: their estimation suggests that the process of rural growth in the 1990s benefited the bottom 10 percent (mainly the wage labourers) and the top 30 percent (who of course benefited the most among all the rural groups), which was quite different from the urban scenario, which showed that the 'growth rate increases almost monotonically as one proceeds from lower expenditure percentiles to higher expenditure percentiles.' (pp. 19)

What these estimates and figures indicate is that there has been a relatively higher rate of pro-poor growth in rural Bangladesh compared to the national growth trends in general, and urban trends in particular, especially in the 1990s. Analyses indicate that expansion of the rural non-farm sector has been one of the major contributors in the pro-poor growth in rural Bangladesh.

1.3 Development of Rural Non-Farm Sector in Bangladesh

Although the traditional image of farm households in developing countries has been one almost exclusively focused on farming – and thereby equated farm income with rural income and rural/urban relations with farm/non-farm relations (Reardon et al, 1998) – the reality has started to diverge from this traditional view since the 1980s, particularly with regard to rural employment in Bangladesh.

Since the early 1980s, the patterns of rural employment in Bangladesh have been undergoing significant changes, changes associated with the diversification of employment, particularly in the form of a shift from agricultural activities to those commonly labelled as rural non-farm (RNF) activities. Statistical evidence used in recent literature on this issue suggest that the trends in diversification of rural employment, both from agricultural to RNF activities and within agricultural activities, have been quite significant in reshaping the structure of the rural labour force.

Several works (e.g. Mahmud, 1996; Sen, 1996; Bhattacharya, 1996) have outlined the quantitative significance of the transformation of the rural labour force towards non-agricultural occupations. Extensive use of data from the Bangladesh Bureau of Statistics (BBS) and a number of micro-studies in the above papers suggest two aspects of transformation: (one) significant growth in the share of non-agricultural employment, and (two) the resulting large share of non-agricultural employment in the total rural

employment. Sen (1996) also used data from 62-village BIDS2 repeat panel surveys to show that the share of non-agriculture in total employment has risen from 35 to 45 percent over the period 1987–4 (note: this was the continuation of the transformation that started in the mid-seventies – according to the Labour Force Survey, the decline in agriculture's share in rural labour force was from 85 percent in 1974 to 66 percent in 1984–85). Statistics also suggest changes within the agricultural employment – for example, the BIDS panel survey indicates decline in the share of crop cultivation and wage labour, and growth in the share of fisheries, livestock and poultry in the total agricultural employment sector.

Thus the change in rural Bangladesh from farm to non-farm economy has been occurring in two ways: (one) diversification within agricultural employment, and (two) diversification between agricultural and RNF activities. It is important to define the scope of RNF activities at this point. BBS (1992) includes the following categories into the domain of RNF: (1) small scale manufacturing (in permanent establishments), (2) wholesale and retail trade, (3) hotels and restaurants, (4) services and (5) the household sector. However, there are some differences among academics in defining the RNF activities, for example, Bhattacharya (1996) included non-crop agriculture in the list of non-farm activities.

Why this transformation in the rural labour force in Bangladesh is happening is a question of considerable debate – the so-called 'push-versus-pull' debate. The debate is about whether the shift of labour out of agriculture has taken place due to the 'pull' effect of increased income earning-opportunities provided by an expanding RNF sector, or whether it represents a process in which the deteriorating employment and income conditions of farm worker 'pushes' them into low-productivity, non-farm activities of a residual nature. The latter hypothesis has dominated much of the traditional thinking on non-farm activities that originated from the work of Hymer and Resnick in 1969 (Mahmud, 1996). However, macro level evidence and the analysis provided in the majority of the existing literature (e.g. Sen, 1996; Bhattacharya, 1996; Bakth, 1996) have indicated that the recent development experience in Bangladesh does not lend support to the latter hypothesis. In fact, most of the academics whose work has been cited so far, tend to accept none of the above hypotheses strictly, but rather follow a middle-path recognising the contribution of both the 'push' and the 'pull' effects. As Mahmud (1996) noted, 'The picture that emerges is perhaps one of a precarious balance between the push and pull factors in the sectoral transformation of the rural labour force. This balance seems to have kept the rural poverty situation from deteriorating, without making much improvement in the situation either.'

Although given the dominance of agricultural activities in the rural economy (nearly one quarter of Bangladesh's GDP still comes from the agricultural sector) the growth of agriculture is a necessary precondition for any rapid rural growth and the importance of the rural non-farm sector is underscored by two considerations (Bakht and Shah, 1996). First, agricultural development and the growth of the RNF sector are likely to be mutually reinforcing, which is viewed to be critical for rural economic growth to take place, given the evidence from Bangladesh and abroad. Second, the slowdown of agricultural growth throughout the 1980s and the early 1990s, coupled with a declining trend in factor productivity with respect to modern inputs such as fertilizer and irrigation, suggests that Bangladesh may be close to the technological frontier in relation to agricultural growth under the present agrarian structure and with available technologies. Bakht and Shah (1996) have pointed out two potentials of the RNF sector in Bangladesh: (1) it can accelerate the improving trends in rural poverty observed during the 1980s and compensate for stagnant or declining growth in agriculture, and (2) it can contribute to the process of rapid, efficient overall growth. Yusuf (1996) uses the experiences of other developing countries to argue that for Bangladesh to achieve a consistent and high rate of growth (not much less than 7–8 percent) the role of the RNF sector is very important. In several of the fastest growing economies, the non-farm sector strongly reinforced good agricultural performance and in some instances, at a later stage of development, it has served as a leading sector in its own right.

Sen (1996) shows that the growth of the RNF sector in Bangladesh has been pro-poor and, that it has had a considerable poverty reducing impact in the rural economy. However, this view has not gone unchallenged, as discussed above, Mahmud (1996), for example, argues that the expansion of low productivity self-employment has been the major contributing factor in the growth of RNF sector. Raising doubts about the sustainability of this pattern of growth of the sector, he further argues that while the provision of such employment opportunities has been crucial for absorbing the growing numbers of rural workers coming from landless households, the labour shift may have created some degree of overcrowding in the low-productivity non-farm activities, thus undermining the growth of overall productivity and income levels in the RNF sector.

Despite the debate regarding the nature and sustainability of the growth of the RNF sector, it has been clearly evidenced that it has achieved positive growth in terms of generating rural employment and income since the early 1980s. Several papers have undertaken analysis regarding the factors contributing to the growth of the RNF sector, however, institutional analysis to investigate which institutions or institutional mechanisms have been responsible for the growth of the RNF sector and how the institutions contributed in the process etc. hardly exists.

A number of academic exercises, most of which have been cited above, have tried using macro data in most cases, and micro evidence in some cases, to analyse the contribution of several factors in the growth of the RNF sector in Bangladesh. While some researchers emphasize factors like landlessness and labour productivity, others highlighted the positive role of micro-credit, though some evidence indicates

that micro-credits have a much more diverse use than the official picture portrays, including consumption purposes, repayment of former loans and on-lending (MPI, 1998). The excessive attention on the role of micro-credit in the expansion of rural non-farm activities (RNAs) has perhaps caused some other important factors to be rather overlooked; one such factor has been rural infrastructure.

1.4 Infrastructure and Growth

It is widely recognized that the role of infrastructure in economic development is significant and often greater than that of investment in other forms of capital (World Bank, 1994). Mujeri (2002) argues that roads and other rural infrastructure play an important role in the socio-economic development of rural areas in two ways: directly and indirectly. 'In direct terms, the development of infrastructure provides immediate cash incomes to the rural population, particularly the poor, through their participation in construction and maintenance works. Indirectly, improved infrastructure reduces the costs of transport and marketing of rural products, increases farmgate prices, facilitates access to modern inputs, and improves access to social and welfare services.' (pp. 21) The components of rural infrastructure are many – including irrigation, schools, health clinics, land development, water supply and sanitation – and the development of other facilities includes the three important elements: roads, markets, and electrification. Mujeri (2002) further describes 'Starting with only 4,000 km of primary and secondary highway networks in 1971, Bangladesh has now an extensive road network of nearly 223,000 km covering four broad categories of roads – national highway, regional highway, feeder road, and rural road. Similarly, 2,100 markets are being developed as growth centres covering the rural areas of the country.' (pp. 21) A recent World Bank study suggests that when physical infrastructures like roads are combined with ICT (e.g. mobile telephones), a multiplier effect on growth is observed.

While the correlation between infrastructure and growth in general has been discussed extensively, as in Mujeri (2002), very few analytical research papers have substantially reviewed the role of rural infrastructural development in the growth of the RNF sector in Bangladesh. However, Khandker (1996) makes reference to data indicating that better markets and infrastructure are perhaps good facilitators for RNF-led growth; Yusuf (1996) also compares cross-country evidences to show that infrastructure is important to the growth of non-farm activities.

Outside academic literature, few project evaluations underscore the contribution of rural infrastructure in creation of rural employment and in overall growth of the RNF sector. According to MPI (1998), rural infrastructural development has undoubtedly provided improvements by facilitating transport and access, reducing transport costs and time, and triggering economic activities. Evaluations of the Rural Roads and Market Improvement and Maintenance Project – I (RRMIMP-I) and RRMIMP-II, two components of the Rural Development Projects implemented by Local Government Engineering Department (LGED), establish the significant positive contribution of rural infrastructure towards diversification of the rural economy and poverty eradication by facilitating the adoption of various non-farm activities by the landless and land-poor population (BIDS, 2002). The evaluations using quantitative analysis show that non-agricultural employment has increased at a much higher rate in the project areas compared to the control areas.

It is sometimes argued that the success of micro-credit programmes in Bangladesh has been coupled with the development of rural infrastructure; in fact, rural infrastructural development in the forms of rural public works (RWP) and the Thana Irrigation Programme (TIP) and micro-finance have been seen as two interrelated sub-strategies for achieving poverty alleviation (MIP, 1998). A H Khan, the pioneer of the famous Comilla Model tried to integrate these two strategies and considered that the breakdown of the interrelationship between the RWP, the TIP and the co-operative would result in undermining of the whole rural development effort through the Comilla experiment (Sattar, 1996). However, few researchers have also been critical about the role of infrastructure in the development of RNF sector, Hossain (1994) uses, for example, a probit model to reveal that the development of rural infrastructure does not have a positive impact on participation in RNF activities. These analyses, of course, are subject to particular limitations in terms of the sample which included activities of a residual nature and in terms of availability of appropriate data required for such analysis (Varma and Kumar, 1996), though with the computerization of records in the LGED, good data is now available on the required variables for such analyses. Yusuf (1996) refers to empirical evidence in some other developing countries that suggests the positive relationship between infrastructure and diversification of economic activity in the rural sector.

While the available literature (including those cited above) underscores the contribution of infrastructure in the growth of RNF sector is Bangladesh, institutional analysis in this regard hardly exists. Although several researcher papers and development practitioners have highlighted the contribution of institutions like LGED, substantial analysis of the institutional questions (e.g. how the institutional mechanism functions) is missing. However, it should be noted that there are exceptions in the form of evaluations, though they are very few. MIP (1998) while evaluating the Rural Employment Sector Programme (RESP) focused on the institutional development of LGED in terms of development of a 'unique' model that may be replicable in other countries; however, a comprehensive and critical institutional analysis is usually beyond the scope of such an evaluation. This paper is an academic initiative to dig into the institutional dynamics regarding the role of LGED in the growth of the RNF sector in Bangladesh through infrastructural development. LGED is a Department under the Ministry of Local Government with substantial capacity

to implement infrastructural projects of varied sizes avoiding traditional bureaucratic complications. The donor support to this unique body has also been significantly high.

1.5 Study Objectives and Methodology

Objectives

This study on the role of organizations like the LGED in the development of RNF sector in Bangladesh has been undertaken with the following objectives.

- To examine the role of the LGED as an organization in developing the rural infrastructure and hence promoting the growth of the rural non-farm sector.
- To examine the factors contributing behind the LGED's success in emerging as a key institution in Bangladesh for the development of RNF sector.

Research Question

Given the above context and objectives, the following research question had evolved:

How has the LGED been developing and working as an institution that has contributed in the growth of RNF sector in Bangladesh?

While this has been the central question of the study, several other related issues have been investigated to strengthen and contextualize the arguments:

Methodological Approach

The study uses data from both secondary and primary sources. While the bulk of the data is available from the secondary sources, both in textual and statistical forms, the primary data collection required some qualitative investigations.

The study has undertaken a comprehensive review of the secondary data available and simultaneously has also collected substantial primary data using qualitative methods from different levels. The qualitative investigation has been undertaken in different forms including Participatory Rural Appraisal (PRA), observation, interviews and discussions.

Levels of Investigation

Investigations have been undertaken at different levels as the institutional dynamics related to the role of institutions like LGED in the growth of RNF sector involves stakeholders from community to national levels. The study, therefore, has gone through a multi-level investigation as presented in the following matrix.

Matrix 1: Levels of Investigation

Level	Issues	Methods/Techniques
Village (Households & Community Levels)	Role of rural infrastructure in rural income generation	PRA tools
	Role of LGED in developing rural infrastructure & promoting employment & income in rural areas	PRA (mapping, timeline – before & after, etc.)
Union Level	Role of particular infrastructure facilities like growth centres developed by LGED in increasing RNAs	Observation, interviews, informal discussion & PRA
	Role of differnt committee/bodies formed by LGED at the union level	FGDs & interviews
Upazila (sub-district) Level	Local institutional mechanism of LGED	Interviews of LGED officials & relevant government officials
National Level	Institutional mechanism of LGED in contributing to the growth of RNAs	Interviews of experts & personnel currently and/or previously involved with LGED

Sources of Data and Methods Used

Secondary Data

The study has undertaken a comprehensive review of the existing literature on the related issues, statistical data from different sources has also been collected and reviewed.

Primary Data

To capture the role of LGED and its institutional mechanism in rural areas, primary data has been collected from two villages, in two districts of the country.

A wide range of qualitative tools have been used to generate the required data from different levels. Specifically, the following qualitative investigation has been undertaken:

- **PRA tools at village level**: mapping (social, resource and mobility focusing on the before-after scenario), and time-line and focus group discussion (FGD) with particular groups of villagers.
- **FGD and interviews**: with relevant stakeholders at the union level e.g. the local government body called Union *Parishad,* and different community organizations facilitated by LGED including the following:
  - o Project Implementation Committee (PIC)
  - o Labour Contracting Society (LCS)
  - o Market Management Committee (MMC)
  - o Water Management Co-operative Association (WMCA)
  - o Female groups engaged in maintenance of rural roads
- **Observation** of selected infrastructural facilities at the union level e.g. growth centre.
- **Key informant interviews (KII)** with LGED officials working at the *upazila* level, *Upazila Nirbahi* Officer (UNO), and at the central (national) level.

2. INSTITUTIONS AND ECONOMIC GROWTH

The comparative experience with economic growth over the decades after World War II has posed a number of intriguing questions. It has become evident that the growth process itself cannot be explained merely by the simple neoclassical equation stating that per capita product is a simple function of effective labour. As classical political economists have already emphasized, economic growth can be presented only by a much more general equation assuming that the gross domestic product is a function of the employed production factors namely capital and labour, their productivity and institutions. Special emphasis has been put on natural conditions, government and international relations and many of the theories developed later, especially in the neoclassical tradition, neglected the significance of institutions in the process of economic growth. Nevertheless, many articles published in the last two decades, emphasize on the importance of institutions as supporting factors in the growth process (Redek and Susjan, 2005).

In recent years scholars and policy makers alike have paid increasing attention to the complex relationship between institutions and economic development – likewise there is widespread consensus that institutions matter crucially for development. The institutional settings within which economic policies are formulated are of crucial significance because the quality of these institutions can be a major cause of the differences in economic growth among nations. For Acemoglu (2005), differences in economic institutions are the fundamental causes of differences in economic development: institutions are the rules of the game in a society; more formally, they are the limitations to free behaviours imposed on the individuals by the society, shaping the relationships among individuals. As with North (1990, 1991) he suggested that institutions shape the incentive structure that may impede or increase economic activity (North 1990, 1991).

Rodrik (2000) presented one of the most thorough analyses of the role of institutions in the process of economic growth, taking into account the roles of property rights, regulatory institutions, institutions for macroeconomic stabilization, institutions for social insurance and institutions of conflict management. Lane and Tornell (1996) observed that many countries that are rich in natural resources such as Nigeria, Trinidad and Venezuela have done poorly in terms of economic growth because natural resources suffer from 'common-pool' problem, that in the absence of well-defined and protected property rights, natural resources can be exploited by a number of powerful political groups. Poor countries tend to have unreliable legal systems, corrupt government and insecure property rights and where institutions are poor, entrepreneurs succeed on the basis of political rather than economic criteria – hence the survival of inefficient entrepreneurs who happen to have the personal ties with state officials that are necessary to protect against expropriation (Keefer and Knack, 1997).

Institutions can be formal or informal: formal institutions are normally established and constituted by binding laws, regulations and legal orders which prescribe what may or may not be. Informal institutions on the other hand are constituted by conventions, norms, values and accepted ways of doing things, whether economic, political or social. These are embedded in traditional social practices and culture which can be equally binding (Leftwich, 2006).

Politics steers, profoundly by rules, political behaviour in different directions. Since the 1980s, political scientists have developed a renewed interest in the study of political institutions based on the assumption

that 'institutions matter', that is, a set of constitutional-legal rules and structural arrangements within which politics take place (as well as informal institutions) are crucial determinants of the shape of politics and policy outcomes (Lijphart, 2002). For others, institutions are rules or norms which people live by either abiding or breaching them (Lane and Ersson, 2000). Hence institutions are not merely weak and inconsequential superstructures dependent on a 'truly' determinant socio-economic, cultural and non-institutional base (Lijphart, 1991).

Most political actions of real consequence occur in institutions, therefore, it is crucial to understand how these bodies act and how they influence the behavior of individuals working within them (Peter, 1999). A generation of work has shown that institutions affect various political outcomes – for instance, numerous scholars have shown that electoral systems shape the behaviors of parties, candidates and voters (Duverger, 1954; Rae, 1971; Riker, 1982; Cain et al.,1987; Taagepara and Shugart, 1989; Lijphart, 1994; Sartori, 1994; and Cox, 1997); other scholars have demonstrated that different constitutional structures such as presidential or parliamentary systems affect regime stability, accountability, responsiveness and democratic durability (Lijphart, 1991; Shugart and Cary, 1992; Stepan and Skach, 1993; Linz and Valenzuela, 1994; and Shugart and Mainwaring, 1997). Comprehending its significance, Rhodes (1997) has termed this institutional approach as the 'historic heart' of the political science discipline and 'part of the toolkit of every political scientist'.

Historical Institutionalism

The historical growth of a particular organization is crucial in identifying the degree of institutionalization. Institutional history enables us to understand both the origin of an institution and the paths by which it has developed (Berman, 1983), virtually, by definition, institutions have grown over a period of time. Institutions simply cannot be understood without looking at their historical evolution (Patterson, 1995).

Each institution has its own history; its own time-dependent line of development and how a social system develops, operates and affects its structure and capacities for action (Scott, 1995). Institutionalization is something that happens to an organization over time, reflecting the organization's own distinctive history, the people who have been in it, the groups it incorporates and the vested interests they have created, and the way it has coped with the environment (Selznick, 1957).

An institution is, by definition, an organization that has been around for a while: it has a life history. The US Congress became what it is today through an evolution of some two hundred years; the British parliament took its current shape after a much longer evolutionary period than the US Congress; after the Second World War, new versions of parliaments were established in Germany and Italy and these have developed into their respective contemporary shapes (Patterson and Copeland, 1994).

Institutions rely upon the logic of persistence or path dependency and once launched on that path they continue along until some sufficiently strong social/political force deflects them from it (Krasner, 1984). Institutions tend to embody and promote values, so changing trends require not only changing structures but also the prevailing mind-set about what the institution should do. Further, public institutions once created tend to have structural relationships with society and with powerful social actors. However, though the path may be altered, it requires a good deal of political will and determination to produce such a change (Peter, 1999).

Normative Institutionalism

Normative institutionalism as developed by March and Olsen (1989) underlines the role of values and the logic of appropriateness in defining institutions (Peters, 1999), specifying what is appropriate for a particular person or role in a particular situation. The logic of rule-driven mandatory action is: 'What sort of situation is this? What kind of person(s) am I (are we)? What does a person like myself do in situation like this?' (March and Olsen, 1989). In the case of logic of appropriateness, there are requirements for knowledge regarding the situation and for consistency and clarity in identities (March and Olsen, 1996). The 'logic of appropriateness' as defined by the values of the institution prescribes parameters of acceptable behaviour for members of an institution, developing over time and through interactions among institutional members. In this sense it is evolutionary by nature (Peters, 1999), hence, historical growth of a particular organization is crucial in identifying the degree of institutionalization.

These institutional considerations have to be included while analysing the role of any particular institution in the changing trends in Bangladesh (like the one in case of the RNF sector).

3. DEVELOPMENT OF LGED AS A KEY INSTITUTION FOR RNF SECTOR GROWTH

3.1 History of LGED's Emergence

The LGED (Local Government Engineering Department), whose origin dates back to the Rural Works Programme (RWP) initiated in the early 1960s, developed rapidly throughout the 1980s and 1990s under the visionary and dynamic leadership of the former Chief Engineer of LGED Quarmrul Islam Siddique. To administer the Rural Works Programme (RWP, a component of the Comilla Model of rural development

pioneered by the famous Aktar Hamid Khan at BARD) nationwide – which was started in the early 1960s, the Works Programme Wing (WPW) was created in 1982 under the Local Government Division (LGD) of the Ministry of Local Government, Rural Development & Co-operatives (MoLGRD&C). Subsequently the administrative decentralization act of 1982 paved the way for the organization to introduce a decentralized system of rural infrastructure development which raised the profile of WPW and converted it into the Local Government Engineering Bureau (LGEB) under the Government's Revenue Budget in October 1984. The support by development partners, first SIDA (in the mid 1980s), followed by World Bank, ADB, Japan and others, corresponded with the needs for rural infrastructure development in the country and the readiness of LGEB to take on more responsibilities. In recognition of the need for allocation of revenue budget for maintenance, and pressed by donors' consortium meetings, with the lead role played by the World Bank, LGEB was upgraded as the Local Government Engineering Department (LGED) in August 1992 and Mr Siddique became the first Chief Engineer. The institutional and capacity strengthening support was provided by donors particularly the ADB funded MANCAPS. In addition to such external assistance, the staff were sent abroad to improve the quality of human resources.

Matrix 2: Evolution of LGED: Major Milestones

Early 1960s	Rural Works Programme
Late 1970s	'Cell' under MoLGRD&C
1982	Wotks Programme Wing of MoLGRD&C: began receiving development budget Administrative Decentralization Act: *Upazila* engineer posts were created
1984	Lovel Government Engineering Bureau (LGEB) of MoLGRD&C
Mid 1980s	SIDA and World Bank began assistance followed by ADB and others
1990	BIDS study validated socio-economic impacts of rural infrastructure
1992	Local Government Engineering Department (LGED) of MoLGRD&C: began receiving revenue budget
1996	The HQ building was inaugurated in Dhaka Cited as 'government that works' in a World Bank report
2005	The Rural Development engineering Centre (RDEC) building was inaugurated

Source: The Ministry of Foreign Affairs of Japan 2005.

The staff of 3,000 in 1992, when the organization was converted from LGEB to LGED (which enabled it to receive revenue budget for maintenance) grew to nearly 10,000 by the late 1990s. LGED today is the second largest organization to handle GOB's Annual Development Programme (ADP). Table 2 gives an idea how rapidly the LGED increased the size of its investment in infrastructure during the 1990s.

Table 2: Infrastructure Investment by LGED

Year	Investment (billion Tk.)
1991/92	3.97
1992/93	5.35
1993/94	10.46
1994/95	11.42
1995/96	10.97
1996/97	13.98
1997/98	13.28
1998/99	18.48
1999/00	23.82
2000/01	24.27

Source: LGED (2001)

3.2 Overview of LGED

The LGED has implemented about 70 projects, most of which are related to the development of rural infrastructure. The projects are divided into five broad categories (LGED, 2002):

i) Rural Development and Institutions (RD&I)
ii) Physical Planning, Water Supply and Housing (PPWS&H)
iii) Agriculture
iv) Water Resource
v) Transport

In implementing its project, the LGED has been following three approaches:

(i) Constructing facilities and maintaining the infrastructures
(ii) Transferring facilities to other organizations after construction
(iii) Constructing facilities on commission of other government ministries/departments

The following are the interventions by the LGED related specifically to rural infrastructure development:

1. Roads

- Feeder Road B (FRB) rehabilitation and improvement of earth to all-weather roads, including bridges and culverts
- Rural roads categories A, B and C 3 reconstruction, rehabilitation and upgrading, including foot bridges and culverts
- Road maintenance of FRB and rural road repair and routine maintenance
- Tree plantation along road sides

2. Growth Centres (Markets)

- Sheds
- Internal roads and connecting roads
- Water and sanitation
- Drainage
- Open and closed sales areas

3. Small Scale Water Resource Scheme

- Flood embankments
- Water control structure for drainage, flood control such as sluices and regulator
- Re-excavation of drains and canals

4. Other Infrastructure and Building Materials Work

- Pipe casting and culvert installation
- Building materials/action research
- Functional buildings

Table 3 lists the components of LGED's activities and shows the extent of achievements in those components.

Table 3: Various infrastructure development components of LGED (Cumulative for 1996/97 to 2000/01)

Components	Physical Achievement		Expenditure (million Tk.)
	Unit	Quantity	
Earthen road construction	Km	22,159	3,671.6
Paved road construction	Km	9,177	17,155.5
Bridge/culvert constructions	M	161,662	18,970.0
Tree plantation	Km	5,078	224.0
Maintenance of earthen roads/flood rehabilitation	Km	253,884	2,667.7
Maintenance of paved roads/flood rehabilitation	Km	9,718	4,374.9
Bridge/culvert maintenance/flood rehabilitation	M	24,851	1,251.2
Construction/reconstruction/repairing of primary schools	No.	24,531	10,988.8
Small irrigation and flood control	Ha.	108,048	824.3
Union *Parishad* building construction	No.	93	260.3
Community Clinic construction	No.	1,935	440.0
Cyclone shelter rehabilitation	No.	224	331.2
Drain construction	Km	344	586.7
Community latrine construction	No.	19,259	62.1
Slum develpment/rehabilitation	Family	32,154	219.2
Market development	Sq. m.	30,520	96.3
Installation of tube-wells	No.	723	9.7
Landing stage construction	No.	26	13.0
Rubber dam installation	No.	1	90.0
Bio-gas plant construction	No.	1,383	13.2

Maintenance programmes	...	...	5,000.0
Others	...	...	25,536.2
Total	...	...	93,827.7

Source: LGED (2001).

4. LGED'S INSTITUTIONAL DYNAMICS

4.1 Leadership as Institution

An evaluation report finds that two main factors – continuous and dynamic leadership backed by broad-based, flexible and long term donor support for the education of the organization – have been critical for the achievement of LGED (MPI, 1998). In a hierarchical society like Bangladesh, role of leadership in leading an institution is significant. People like to see seniors as role model; through personal integrity and professional excellence, a leader can present him/herself as model before his/her followers and can help to institutionalize rules. In the case of the LGED, the founder and chief engineer became a symbol of capable leadership and integrity. Unlike successful leaders in other organizations in Bangladesh, he did not inhibit the emergence of new leaders and managers in the LGED, rather he inspired colleagues around him to grow up and consequently a good number of top managers were ready to take over, who were trained by him when he left the organization. The unique leadership and management of the LGED since its birth has been critical for setting the organization on a solid base. The LGED's former chief engineer was with the organization for18 years. In leading an organization in Bangladesh, capacity for articulated moves, balanced temper and the ability to maintain good relations with all sectors in the government is essential. LGED's institutional legacy of Comilla model of rural development (chracterized by institution development, people's participation and pragmatic empirical research) and the dynamic and inspirational leadership of chief engineer Quamrul Islam Siddique have profoundly shaped LGED's institutional performance.

Leadership is a critical trigger of institutional transformation, institutional performance and institutional advancement/success. A capable person in general and a competent and honest leader/public manager in particular can become the nucleus of an institution. In a hierarchical or patrimonial society like Bangladesh, the leader can be an eternal source of inspiration and model before the employees; s/he can appear as promoter or impediment to rule application or rule adjudication in a particular organization; s/he can either lead the institution from the forefront or lead it to the verge of destruction as we have seen in the case of some ministers leading their ministries in Bangladesh to a position of no return. All successful institutions in Bangladesh (Yunus in Grammen Bank, Abed in BRAC, the board in PKSF, and T N Seshan, former Chief Election Commissioner of India) are person/board-centred. Good people at the top have really mattered for institutional success in Bangladesh and the LGED is not an exception to this case. S/he can manifest his/her honesty and neutrality in recruiting, promoting, training, transferring employees in his/her organization and other key people will follow suit. If s/he might have been there for a long time, his/her style of leading the organization and behavioural pattern might make an impact in shaping institutional values. A leader's background is also a crucial determinant of the way s/he leads the institution – family background, schooling, training and job experience – can influence his/her behaviour and leadership pattern. In the case of the LGED, Mr Siddique's education at BUET, his stay in Japan, his previous job experience with the successful organization BARD, and above all, his association with his development practitioner father, all contributed to the making of the leader.

4.2 Personnel Management and Development in LGED: The Key Institution to Success

Clearly professional staff are the eyes and ears of an organization. The quality and quantity of staff in an organization matter a lot for institutional performance; an institution that delivers is replete with qualified professionals who can hold substantial authority and expertise. LGED is headed by the Chief Engineer who is supported by 2 additional Chief Engineers, 6 Superintending Engineers, 6 Executive Engineers and 6 Assistant Engineers at the HQ, 6 Design Engineers at the Circles, 64 Executive Engineers at the districts and 460 Thana Engineers at the Upazilas. LGED has its headquarters in Dhaka but its infrastructure construction and maintenance works are executed through fully-staffed offices in every District, headed by an Executive Engineer (XEN), and every Thana, is headed by a Thana Engineer (TE). The total number of engineers and other staff under the permanent establishment of LGED is 9,548, making the LGED one of the prime engineering organizations actively participating in the active development efforts of Bangladesh.

Training has been widely recognized as an essential means to acquire knowledge, skills and motivation. The LGED has always placed emphasis on human resource development and the training programme gained real momentum in 1984–85 when a Long Term Strategy and Planning for Training were formulated. At present, all the training programme in LGED are co-ordinated and implemented through the HQ Training Unit (TU) and 14 District Training Centres. The TU offers 40 types of course to different categories of

LGED officials, courses including technical, management, financial and socioeconomic issues. Foundation training of new recruits of LGED is catered for at BARD – the birth place of today's successful institution to feel and sense its roots. On-the-Job Training (OJT) is also considered a very effective method and training courses are also offered to the contractors and representatives of the local government institutions etc. The LGED management has adopted the corporate culture of recognizing its staff for outstanding achievement through its corporate magazine, in its citation, in selecting staff for overseas training and in other functions, which has boosted staff morale. Likewise, a penalty system for wrong doing is also in place. Delinquent officials have been punished on many occasions: a hierarchical set up is in use in LGED for ensuring internal accountability of officials, there is no trade union in LGED and institutional rules are strictly followed in disciplining officials. Apart from the vertical accountability mechanism, horizontal oversight of LGED officials is continuously done by local people and their institutions.

In addition to having the right and qualified people at the top, providing training to the staff based on long-term human resources planning, ensuring promotion based on merit and performance and delegating responsibilities are very important. Highly qualified technical graduates from engineering universities/ institutes have been recruited in LGED and transfers of LGED officials (three years on an average) have been as per government rules. This sort of stability and certainty has made positive impact on their performance; these incentives though not financial ones have worked well in LGED.

Red-tapism is at the minimum level as far as LGED's own decision-making is concerned. Rather than using written communication based on the movement of files, it takes many actions through telephone, fax and e-mail contacts. LGED's Management Information System (MIS) dates back to 1987 when a computerized monitoring system was applied to the Rural Development Programme in Kurigram. The LGED top management attaches the highest priority to MIS and since 1993, efforts have been underway to set up uniform system for monitoring and evaluation of LGED projects (World Bank, 1996).

4.3 Decentralized Set-up

A unique feature of LGED is its institutional arrangement where 90 percent of the staff are posted in the field. This field-orientation is higher than any other government organization in Bangladesh and is a key to LGED's high implementation capacity. Leadership, team-work, a sense of responsibility and other managerial aspects are also all outstanding. The decentralized set-up of LGED has also contributed to the effective planning and implementation of various projects. In addition, other aspects of the organizational set-up, work processes, physical arrangements, emphasis on competency development, effective external relationships, and most importantly, leadership have been the backbone of the good performance.

The effectiveness of the institutional mechanism of the LGED has earned considerable recognition from the international community. The World Bank (1996) has hailed the LGED as 'one of the most efficient and effective government organization' and identified a number of institutional aspects that have contributed to its success: decentralization, professionalism, effective monitoring system, practice of informal decision making, continuously motivating leadership of the Chief Executive, good team-work, and sense of mission.

4.4 People's Participation: Institutional Mechanism

Unlike other government organizations in Bangladesh, LGED's infrastructure development activities are planned and implemented through people's active participation and community involvement. Implementation of project activities is done with the involvement of the private sector; small and medium contractors take part in construction activities of LGED and in addition, the Local Government Institutions (LGIs) at various levels – such as the Union Parishads, Upazlia Development Co-ordination Committee (UDCC), Zila Parishads and municipalities – are also involved in the implementation of LGED projects. Moreover, NGOs are involved to assist LGED in social mobilization aspects for planning and implementation of schemes. As a part of participatory development, other important stakeholders such as, Project Implementation Committees (PIC consisting of representatives from LGIs and other categories of people of the locality), Labour Contracting Society (LCS involving rural poor and destitute women in infrastructure construction and maintenance activities), Market Management Committee (MMC), Ghat Management Committee (GMC), Road User's Committee (RUC), Water Management Cooperative Association (WMCA) etc., have been formed under various projects of LGED. Involvement of the private sector, Local Government Institutions, NGOs, beneficiary groups and general people within the catchment area at different level of project cycle through numerous organizations/institutions have created a sense of ownership among these stakeholders and thus people's participation has significantly contributed to the smooth planning, implementation and operation/maintenance of infrastructure development schemes of LGED at the local level. The institutional philosophy of LGED i.e. engagement, accommodation and co-operation have made a positive impact on the effective and efficient functioning of LGED.

4.5 Geographic Information System (GIS): Technology as Institution

LGED has established a GIS set-up with a view to facilitating establishment and maintenance of a computerized national database for planning and implementation of infrastructure development activities, including a digitization of the Thana Base Map at 1:50000 scale for the whole country. GIS uses information that is stored on databases and places it on a map, making it clear to read and understand, the maps are used together with a computerized national database to decide where new roads or schools should be built. GIS can offer the most accurate and detailed geographic guide to the country; every year they are updated by engineers who go around the country on motorbikes to check the information using handheld Global Positioning System devices. At headquarters in Dhaka, LGED staff can draw up maps of the country and superimpose information like the size of villages, location of schools or condition of roads.

It has become an excellent institutional mechanism to plan and identify priorities and this information is open, transparent and available to all – any group can get the information and lobby for a road or school. This openness means that local councilors are fully informed about plans for their area and are thus better able to make sure they spend their budget wisely. With the help of GIS, tough decisions about development priorities and spending can be determined by local needs rather than the whim of politicians or other vested quarters, thus the system could be used to fight corruption and minimize resource waste and irregularities. For instance, roads must connect the growth centres or local markets, not just a politician's house – it can detect whether a request meets local requirements, rather than a politician's demands.

Moreover, the GIS Unit can now, upon request, produce tailored maps at Union, Thana and District level. At field level, the presence of an engineer in every Thana means that LGED has a very substantial influence on the planning, contracting and implementation of local infrastructure works.

4.6 Labour Contracting Societies (LCS): Bringing Rural Employment and Quality of Work Together

In 1980, the LGED in Bangladesh introduced the concept of a Labour Contracting Society (LCS) for ensuring fair wages and skill development its members. The LCS is a procedure for forming and contracting groups of disadvantaged rural people, including poor women, to undertake unskilled infrastructure works, most commonly earthworks, so that the benefits of employment are directly targeted to the poor; the concept is to bypass the traditional mode of contracting. It has also developed the concept of tree plantation and caretaking along the embankment slopes of rural roads. The trees are cared for by groups of poor women who also own a share of the trees, so that the system provides benefits to the poor at the same time as improving the environment.

The LCS encourages the government body in charge of rural works to directly contract an organized group of workers. The LCS is a group of 12–30 'third class contractors', registered with the Local Government Engineering Department (LGED), given training for four days prior to commencement of the work. The total cost of one contract with the LCS does not exceed one l00 thousand taka and one LCS does not get more than one contract at a time. Members of an LCS earn money in two ways: wages as labourers and profit as contractors – a contractor usually makes five per cent profit from a construction work, but the LGED fixed 10 per cent profit for LCS groups. The LCS has a bank accountant from which money can be drawn with joint signature of the president and the treasurer; individual members also have accounts in their names. The LCS has become a means for undertaking good quality work.

To form an LCS, an open consultation of local people is organized. From the people gathered, the required numbers of workers are selected and then divided into groups of the size stated above. Each of the groups becomes a separate LCS, which then elects their officers, thus the LCS gets a formal shape. After these formalities are over, the contracts with the LCS is made on stamp to give it a legal status. The LCS also has to open bank account to receive money from LGED. A detailed description of the process of formation and functioning of an LCS, as found from our field investigation, is illustrated in the box below.

LCS for the Kothabari Beel Sub-Project in Dohar

Kothabari is a water-body (locally termed as 'beel') in Dohar upazila of Dhaka district. LGED has been implementing a project on this beel since 2004. The project is titled Kothabari Beel Sub-Project. A total of 14 LCSs (each having 25 members) are operating in this project area. Here is the story of one such LCS.

Formation of the LCS: The initiative of forming the LCS was undertaken by the local Water Management Cooperative Association (WMCA) facilitated by LGED. The WMCA started the process by means of mass announcement using mikes. A mass gathering was thus arranged. It was announced in the mass gathering that under the project excavation of canals attached to the beel would be undertaken and that after excavation fish culture would be initiated. It was also announced that the WMCA would be in

overall charge of this work of canal excavation and the LCS members would be among the beneficiaries of the work. Thus people were invited to join the group (LCS) who would need to do the work of canal excavation. At the end of the meeting 25 workers were primarily selected as members of the LCS. A passport size photograph was collected from each of the members and each was given a form which serve as the identity card of the member.

Training: The first sense of unity among the LCS members emerged through the 6-day training arranged immediately after formation of the LCS. The topics covered in the training included what the LCS members were going to do, why they were going to do that, how they would be doing the work, what benefits they would get from the work etc. The workers were trained in the techniques required for carrying out the work of excavation. The training was conducted by an Assistant Engineer of LGED.

Selection of the Office Bearers: A President and a Secretary were selected during the training. The process of selection was facilitated by the trainer.

Bank Account: After the completion of the training, the group opened a bank account. All activities with the bank were handled by the President and the Secretary.

The work: Each member of the LCS has to do the work of excavation. A boundary of work is determined for the group. This particular group was given the work of 500 metres. They will receive a total amount of 272,856 taka after completion of this work. They have completed more than half of their work in March 2007 starting on 13 March 2007. They received 2 instalments of their payment, 20 thousand and 40 thousand taka respectively. The money came to their bank account first and then they withdrew the amounts with the signatures of the President, the Secretary and the Secretary of WMCA. The amounts were distributed equally among all the members.

Monitoring: During the excavation work of this LCS, the LGED officials and the Secretary of WMCA evaluate their work. They observe whether the work is being done properly.

Problems: One major problem that this LCS is facing is the delay in payment. Although they've already completed more than half of the work, they received less than a quarter of the total payment. The rest of the payment is being delayed and that is creating problems for the LCS members. The members complain that the issuing of cheque takes a long time. Besides, there is no provision for covering the expense incurred by the President and the Secretary for travelling to bank and the office. They have to manage this expense through different means.

About the Members: Socio-economic condition of all the members of this LCS is more or less similar. All have land, a little though. The land ownership of the members ranges from 10 to 40 decimals. Most of the members of this LCS are sharecroppers. All of them belong to the poor or extreme poor categories.

Looking Forward: The LCS members hope that they will be able to cultivate fish in the excavated canal and they will be able to use the water for irrigation. Road is being constructed alongside the canal with the excavated soil. They hope that they will be able to plant trees along that road and get benefits from it. They think that the trees will be their assets.

4.7 Construction of UP Complex: Strengthening Local Government

Construction of the permanent, durable and multi-purpose physical infrastructures (hardware aspects) of institutions such as the Union Parishad complex, primary school buildings and, cyclone centres has been an important characteristic of LGED. The government decided to set up the Union Parishad Complex in each union to co-ordinate all development activities at union level as a step to wards strengthening local government institutions. For this purpose, two designs for the UPC prepared by the LGED for non-coastal and coastal areas have been approved by the government and UPCs are being constructed based on the approved designs. Besides using this complex as the office of the Union Parishad, provision has been made to accommodate Union level offices for Health and Family Welfare, Agriculture, Education, Livestock, Ansar and VDP, BRDB and LGED. This will help by providing the villagers with one place to voice their various grievances and problems to the concerned officials getting prompt services from the different offices of government. At the same time, the elected representatives would be able to supervise the activities of the various offices at Union level enabling them to co-ordinate effectively – significantly contributing towards local governance development.

The LGED has constructed more than one hundred UP complexes around the country so far, however most of the UP complex is located at off-grid areas and a remarkable number have no chance of coming onto the national grid network in the foreseeable future. The Solar Photovoltaic System (SPV), introduced by the LGED, can provide modern facilities to extend their ability to work at night; Solar PV installation

is also as considered part of environmentally friendly, integrated development practices of the LGED in remote off-gird regions.

4.8 Donors: Critical Actors in the Institutional Development of the LGED

The development of the LGED into a well performing, rural infrastructure engineering organization is of great value to Bangladesh, a fact also reflected in the current massive donor support to organization in terms of fund-supply for projects, overseas training for LGED officials and expatriate-staff placement. While the roads programme has been implemented through the LGED structure, the management has, to some extent, been 'foreign' through expatriate staff at the headquarters and in the districts. It can be argued that IDP represents not a normal output of the LGED, but a production system with considerably more resources for design, supervision and monitoring than would have been provided if the government alone had implemented the programme. Donors also supervise and monitor donor-funded projects implemented by the LGED.

4.9 Maintenance

The LGED has recognized the importance of maintaining now-improved rural infrastructure. It now receives an increasing annual revenue budget for maintenance, has established a Rural Infrastructure Maintenance Cell (RIMC), and has developed training programmes on infrastructure maintenance. However, much still remains to be done before effective, planned, preventive maintenance of improved rural roads and other infrastructure is fully established throughout the country.

The LGED has also been trying to institutionalize the mechanism for maintenance of rural infrastructure. This comes to the participation of local communities in general and women in particular, for example, under the Rural Maintenance Programme (RMP), local women are given the responsibility of road maintenance – a woman is given the responsibility to look after half a kilometre of the road. This is again done through a process of organizing the local women, similar to the one followed in the case of LCS discussed above.

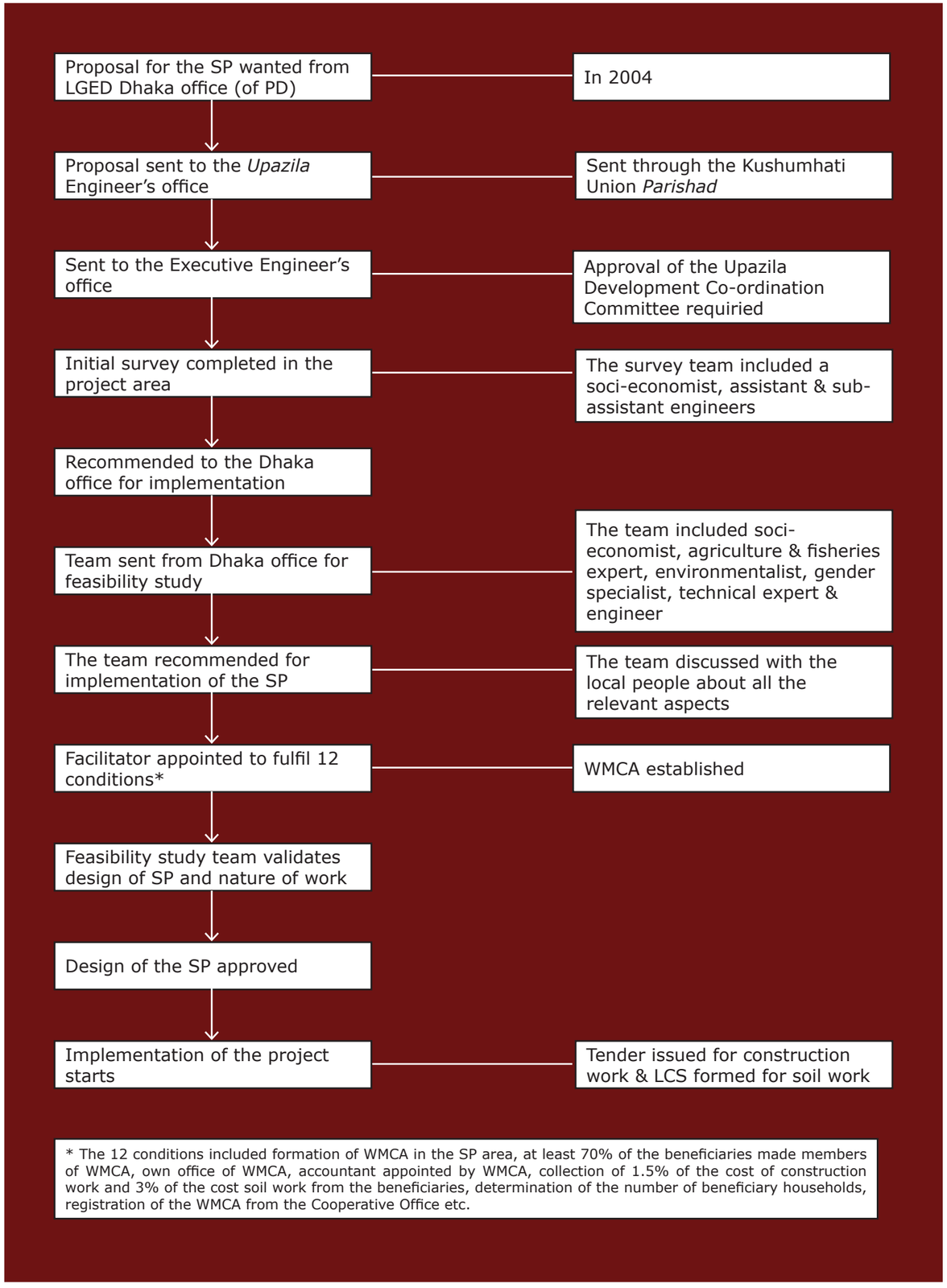
Tale of a Project

The main objective of the Second Small-Scale Water Resources Development Sector Project (SSWRDSP) is to enhance agriculture and fish culture and to take effective steps in poverty alleviation through improving the water resources in different regions of the country. Under this project, several sub-projects are undertaken in different regions of the country. One such sub-project is the Kothabari Beel Sub-Project. How the project started and is being implemented is described below.

The total catchment area of the project is 735 hectares. The majority of the area falls under the Kushumhati Union of Dohar Upazila under the Dhaka district. A total of 2230 households live within this area. Of these households, 713 are direct beneficiaries of the project. The total budget for the project is 29.8 million taka. The major components of the project include re-excavation of 9 km long canal and construction of two sluice gates.

One of the key requirements for the implementation of this sub-project to start was formation of the Kothabari Beel WMCA. The process of forming the WMCA started at the beginning of 2004. First a 9 member committee was formed for 3 months who worked for identifying the project area and informing the local people about the sub-project. After 3 months, this committee formed the first 12-member management committee on the basis of selection. One third of the members were women. While the committee was working for fulfilling the 12 conditions and collecting members and donations, it earned its registration under the Cooperative Act with the help of the Upazila Engineer and the officials of the Directorate of Cooperatives. After the registration, the elected committee officially took the charge and deposited donation money of 262,513 taka to the joint account with the Upazila Engineer. Meanwhile, an amount of 221,200 taka was mobilised through membership fee and selling shares of 100 taka each, and with this money the committee started micro-credit programme. At present, the WMCA has a total deposit of 1,123,000 taka.

Steps in Implementing the Sub-Project (SP)



5. LGED'S IMPACT: EVIDENCE FROM THE GROUND

5.1 Findings from Previous Studies

The discussed activities of the LGED are claimed to have had a huge impact on the development of rural infrastructure and hence the growth of the rural non-farm sector. Quite a number of studies and evaluations have highlighted these impacts, for example, MIP (1998) presents extensive evidence of the impact of LGED's initiatives in developing rural infrastructure in a study aimed at evaluating one of the most successful programme of the LGED: the Rural Employment Sector Programme (RESP). The study hails the contributions the Department has made through the four major components of the programme: (i) rural and feeder roads, (ii) growth centres, (iii) small scale water resource schemes, and (iv) employment through rural infrastructure investments. Two recent studies of the Bangladesh Institute of Development Studies (BIDS) present quantitative and qualitative evidence on the significant contribution of LGED's projects on rural roads, and market improvement and maintenance (BIDS, 2002 and 2002a). An earlier study of the IFPRI and BIDS highlighted the development impact of rural infrastructure in terms of its far reaching implications for the alleviation of poverty by indirectly generating income, agricultural development and positive effect on health (IFPRI-BIDS, 1990).

A joint study of BIDS and the World Bank presented evidence on the contribution of LGED's infrastructural development to the boom of rural non-farm activities. The study highlighted on the following points (BIDS-WB, 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

The Ministry of Foreign Affairs of Japan (2005) highlighted the impact of various infrastructure development programmes within the LGED's activities. It discusses the positive impact of rural roads in 'changing the faces of rural life' in terms of increased school enrolment, better price of agricultural products received by farmers through better access to marketing opportunities, increased mobility, greater employment opportunities and enhanced overall economic conditions of the villagers. The evaluation hails the growth centre describing it as 'nerve centre for rural commerce and trade'. The evaluation also highlights a number of other positive impacts in various forms including the benefits that the landless people receive through the LCSs.

5.2 Findings from Field Investigation

This section will briefly discuss the major findings from the field investigation undertaken for this study. The section starts with an overview of the study areas and then goes onto discussing the various dimensions of impact observed in those areas.

Overview of the Study Areas

Two unions 4 from two different regions of the country were purposely selected for the field investigation. While the unions were the broad areas of investigation, focus was placed on one village in each union for in-depth investigation. Demra Union is in the Faridpur Upazila (sub-district) of Pabna District situated in the northwest region of the country and quite far away from the Capital; Raipara is one of the villages in this union where infrastructural development of LGED is most visible. The second union is Kushumhati in the Dohar Upazila of Dhaka District, which lies about one-hour's drive from the Capital. This is an area where infrastructural development has been remarkable over the recent years, not only by the LGED, but also by other government agencies responsible for infrastructural development of the country. The village selected for in-depth investigation is called Shilakotha; this again is a village in the union where LGED's interventions are relatively more visible.

LGED Activities in the Areas

LGED's interventions in the two areas have been up and running for quite some time now. The following is a list of the major activities in the two unions presented chronologically.

Table 4: LGED's Interventions in Demra: 1996–2006

1996–97	The Kaliyano-Demra bridge constructed
1999–00	Establishment of Demra Growth Centre Bailey bridge in front of Lakshmipara temple set up Demra Bazar Road constructed
2000–01	The Demra River Ghat constructed
2004–05	Soil work along both sides of the pave road from Golkata to Debottar Par Repairing of paved road at Ataikola and mud road at Mridhapara
2005–06	Mud road from Mridhapara to Arodanga constructed Road constructed with Mridhapara village Repairing of paved road at Demra Bazar Road for graveyeard constructed

Source: FGD and interviews.

Table 5: LGED's Interventions in Kushumhati: 2001–2005

2001	Herringbone Brick (HBB) road from Kartikpur Bazar to Ikrashi Kushumhati-Sundaripara foot-bridge
2002	HBB road at Charkoshai paved Classrooms of Kartikpur Primary School constructed & furniture supplied
2003	Classrooms of Ashuliabad Primary School constructed & furniture supplied Mud roads constructed at Shilakotha
2004	Primary schools constructed at Shilakotha & Kartikpur More mud roads at Shilakotha
2005	Work of paving HBB road at Charkoshai extended Paved road constructed Road to Kothabari Beel improved More mud roads constructed

Source: FGD and interviews.

Occupational Shift

One of the major changes that have taken place in the study villages has been the occupational shift from agricultural to non-agricultural activities. Local people suggest that the infrastructural development during the last few years has contributed significantly in this occupational shift. Most of the 169 households in Raipara are now involved in non-agricultural occupations although the village was traditionally heavily dependent on agriculture – similar changes have also been reported in the other study village. Table 6 and 7 compare the current situation with the situation 10 ago.

Table 6: Occupational Shift in Demra Ripara Village: last 10 years (Percentage of households)

Occupation	Current	10 years ago
Business	70	35
Self employed	5	3
Labourer in milk product related activities	10	1
Fishermen	5	25
Weaver	1	10
Transport worker	5	0
Agriculture	1	15
Day labourer	1	10
Salaried job	2	1
Total	100	100

Table 7: Occupational Shift in Shilakotha: last 10 years (Percentage of households)

Occupation	Current	10 years ago
Agriculture	30	50
Agricultural wage labour	6	10
Non-agricultural wage labour	4	5
Petty trading	4	5
Business	3	2
Work abroad	30	10
Rickshaw-van pulling	5	6
Transport worker	5	2
Salaried job	8	5
Weaving	2	5
Total	100	100

Note (for Table 6 and 7): Percentages are estimated by the villagers through participatory exercise.
Source (for Table 6 and 7): FGD with villagers.

It is obvious from the changes that there has been a great expansion in non-agricultural occupation, mainly achieved through non-agricultural employment generation, market expansion and the participation of women.

Employment Generation

The infrastructural development in the two villages has led to creation of substantial employment opportunities in the RNF sector. This has taken place through various routes: firstly, the roads constructed by the LGED increased the mobility of the rural people and reduced transport costs creating opportunities for the villagers to move in search of non-agricultural occupations. The roads have also facilitated small markets and business centres to develop which also have in turn created opportunities of RNF employment. Moreover, employment in the transport sectors has increased through more vehicles (motorized and non-motorized) being on the roads. Secondly, the growth centres developed in or around the villages boosted the economic activities in the villages. This of course means that substantial employment opportunities in the form of business, petty trade and petty jobs have been created. Thirdly, the innovative institutional arrangements like LCS have frequently provided increased opportunities of temporary but substantial wage labour opportunities; this is particularly helpful for the villagers when they have little engagement in agricultural activities.

Market Expansion through Growth Centres

Growth centres are part and parcel of most of the rural infrastructure projects implemented by the LGED. To convert a market place into a growth centre, the LGED is responsible for upgrading the market place – basically by providing drainage, paved roads inside the markets, open and covered sales areas, garbage pits, drinking water and latrines – and the impact of the growth centres in the study areas has been quite substantial. The following points highlight some of the major impacts:

- A considerable increase in the number of permanent shop in the market
- A significant increase in the capital investments in the permanent shops at the market
- An increase in the number of visitors in the market
- An increase in the 'command area', i.e. the distance from which sellers and buyers travel to the market
- An increase in the land value adjacent to the market
- An increase in the number of service facilities such as bank branches, social clubs, co-operatives and schools

Thus, the growth centres have brought about a tremendous boost in the overall economic and business activities in the areas.

Empowerment of Women

One emphasis of the LGED's efforts through its rural infrastructure development projects is the empowerment of women. This has been done in two ways: engaging women in the process of project implementation and targeting women as a special group of direct beneficiaries. A special form of LCS is arranged for rural women, who are given the responsibility of road maintenance, providing them with a regular income for a substantial time on one hand and with the opportunity of enhancing their economic status through substantial additional income, from activities like tree plantation, on the other. Women are also made the direct beneficiaries of some of the interventions – for example, in each growth

centres, there is a 'women's corner' where only women are involved in transactions as buyers and sellers – however, this is a rather recent incorporation and therefore in the earlier growth centres 'women's corners' are not always found. Also, given the gender context of Bangladesh, such an initiative may appear rather more idealistic than practical and hence may have quite limited impact on the livelihood of women in particular.

Overall Impact on Poverty

Due to the changes discussed above, an overall improvement in the socio-economic status of the households in the two villages is obvious. It is apparent from the field investigation that the extent of poverty has reduced substantially in the two villages. Table 8 presents the change in the overall socio-economic status of the villagers in the last 10 years based on the perception of the villagers captured through participatory exercises with them.

Table 8: Change in the Distribution of Economic Categories of Households in the last 10 years (Percentage of households)

Economic Category	Raipara		Shilakotha	
	At present	10 years ago	At present	10 years ago
Solvent	25	5	20	15
Middle	60	25	50	40
Poor	10	40	20	30
Extreme Poor	5	30	10	15
Total	100	100	100	100

Note: Percentages are estimated by the villagers through participatory exercises.
Source: FGDs with villagers.

6. POLITICAL ECONOMY OF INFRASTRUCTURAL DEVELOPMENT

6.1 Who benefits?

Questions are often raised about the distributional effects of LGED's infrastructural development activities. At times it appears that the benefits of the infrastructural facilities are not distributed proportionately in favour of the poor in particular, in contrast to what are stated as the ideal impact of infrastructure on poverty reduction. Some indications as obtained from the field investigation on distributional effects of infrastructure development in the study areas are reflected below.

6.2 Rural roads: benefiting the poor?

It is evident from the findings discussed above that the poor definitely benefited from the development of rural roads, but observations and evidence often point to the fact that the share the poor receives is at times quite small compared to other beneficiaries, targeted or not. In reality, the rural roads in Bangladesh can hardly be orientated to a certain group (poor in particular); rather the roads are orientated to an overall economic investment in rural areas. Roads are not chosen so that they benefit only certain target groups, but the selection generally reflects the prevailing socio-economic system at the local level in which the so called 'elite' has disproportionate, if not paramount, influence (MPI, 1998). However, in absolute terms, the poor have also benefited from the roads, the landless have benefited both directly and indirectly in a 'trickle down' effect and mobility is essential to the poor in Bangladesh – roads proved particularly useful during lean seasons when agricultural labourers moved to labour-scarce areas to employment.

6.3 Growth centres: who benefits from the boost in business?

Like the roads, the growth centres are also likely to benefit people according to the prevailing socio-economic situation in Bangladesh. Although the poor have benefited mostly through the 'trickle down' effect, the majority of the benefits go to those among the villagers who are doing business, and these people are seldom poor. The other dimension of uneven distribution of market benefits relates to the benefits of women. In the growth centres, most sellers are men, and almost all shopping, including food items, is done by men. Although things are changing slowly, still it is rare to see a woman in a rural market, therefore, although the initiative to intervene in the traditional market system by providing 'women's corners' is commendable, it is unlikely to have any significant impact on traditional gendered role in the society.

6.4 Water Resources Scheme: where the benefits go?

Small Scale Water Resources Schemes, like the Kothabari Beel Sub-Project, are not neutral in terms of impact. When functioning as envisaged, they are likely to benefit according to landholdings: larger landowners cannot be excluded from benefits and the problem of selected schemes that benefit mostly very small owners is considerable, if not impossible (MPI, 1998). The landless do not benefit at all in the long run, except from temporary employment in construction, and potentially due to an increasing demand of agricultural labour. Besides, the investment per acre is considerable in some of the schemes, implying a direct subsidy to the landowners as little or no contributions are required, in fact, there can be more negative impacts on the poor in the form of reduction in share-cropping (due to higher profitability of the land) and restricted fishing opportunities for the genuine fishermen in the community.

6.5 Weakening of the Local Government?

While the LGED has been contributing in the improvement of infrastructure in rural areas and hence contributing in rural development through facilitating the RNF sector, it is argued that it has been contributing to weakening the Union Parishad, which is the only elected local government body in Bangladesh. Although the process on paper involves the UP quite extensively, in reality it has hardly any role in the whole process of implementation of the projects. Over the years, a number of policies undertaken by the government have also contributed in making the LGED dominant over the UP. The exercise of power by the local LGED authorities has also brought about changes in the mindset of the elected representatives of the UP, who often think that the Department has superior authority to them. In this way, it is often argued, a structure imposed by the central government has been contributing to the weakening of the existing local government structure in the country.

7. SUSTAINABILITY

There are a number of concerns regarding the sustainability of impact of rural infrastructure development done by LGED. Some of the concerns are discussed here in brief.

7.1 Poor maintenance

It is evident from field investigation that there are serious problems regarding maintenance of the infrastructural facilities created by LGED. The Department does not retain the responsibilities of maintenance in its hands; rather the responsibilities are given to some other authorities – committees or the local government bodies – and as in many cases the committees and authorities responsible for maintenance are not usually the direct users, which leads to poor maintenance of the facilities. Neither have they the capacity to maintain the roads efficiently. This has been a feature in the two growth centres investigated: the committees formed at the beginning of the growth centres have later been captured by influential locals and this has resulted in disorganized maintenance of the centres. Therefore, although the growth centres had the potential to benefit the local people substantially, that potential is already facing questions.

7.2 Lack of Institutional Arrangements for Follow-up

Although the institutional mechanisms followed by the LGED during project implementation are commendable, the absence of an effective follow-up mechanism often puts the interventions under the risk of not being sustainable. For example, once the roads are constructed, LGED does not have any follow-up mechanism of its own, but instead it leaves the responsibilities to the local government body without creating any sort of linking mechanism between the two. This often results in absolute uncertainty regarding the repairing of the roads once required.

7.3 Institutionalization of Corruption

The huge and fast-increasing investment undertaken through the LGED has brought about opportunities of corruption in various ways. In some cases, the corruption has even been institutionalized – for example, the Prime Minister's Priority Project, initiated in 1991, has created immense scope for politicization of the benefits of the infrastructural development activities of the LGED. For sub-projects implemented under this special project, the local offices of the LGED have no contribution in the process due before the implementation; the lists just come from the PM's office for the LGED to implement. Politicization of the contracting out and bidding for construction works has also resulted in poor quality of work in recent years. If these trends continue, there is every possibility that such a highly acclaimed institution, after achieving so much, will lead to institutional decay.

The recent drive against corruption, particularly the political linkage to it, may finally benefit institutions

like LGED, by encouraging it to stand on its own and function more independently. There is, therefore, an imperative of developing a strong board of directors, incorporating independent members from civil society, to oversee the policies and their implementation. Bangladesh has already demonstrated effectiveness such external monitoring in the institution called PKSF – a network of more than 200 MFIs and a success story – the board of this highly successful institution is overwhelmingly represented by academics, microfinance heavyweights and also government officials. We recommend a similar board of governance should be instituted to strengthen the quality of leadership at the top. LGED, given such an institutional boost, can indeed transform itself into a sustainable vibrant organization, engaged in infrastructure development. The legacy of corruption can be wiped out from LGED if it is put under a strong credible board of governors.

8. BIBLIOGRAPHY

Acemoglu, D., S. Johnson and J.A. Robinson (2005) 'Institutions as the fundamental Cause of Long-Run Growth', in Philippe Aghion and Steve Durlauf, eds. *Handbook of Economic Growth*.

Bakht, Z. (1996) 'The Rural Non-farm Sector in Bangladesh: Evolving Pattern and Growth Potential'. *The Bangladesh Development Studies,* Volume XXIV, BIDS, Dhaka.

BBS (2005) *Household Income and Expenditure Survey 2005*. Bangladesh Bureau of Statistics, Dhaka.

Berman, H.J. (1983) *Law and Revolution: The Formation of the Western Legal Tradition*. Cambridge MA: Harvard University Press.

Bhattacharya, D. (1996) 'The Emerging Pattern of Rural Non-farm Sector in Bangladesh'. *The Bangladesh Development Studies,* Volume XXIV, BIDS, Dhaka.

BIDS (2002) *Socio-economic Impact Study of Feeder Road Type-B Improvement under Rural Development Project-7 (RDP-7)*. Dhaka.

BIDS (2002a) *Socio-economic Impact Study of Rural Roads and Markets Improvement & Maintenance Project-II (RRMIMP-II)*. Dhaka.

Cain, B.E, J. Ferejohn and M. Fiorina (1987) *The Personal Vote: Constituency Service and Electoral Independence*. Cambridge: Harvard University Press.

Cox, G. W. (1997) *Making Votes Count: Strategic Co-ordination in the World's Electoral Systems*. Cambridge: Cambridge University Press.

DFID (2004) 'What is Pro-Poor Growth and Why do We Need to Know?' Pro-Poor Growth Briefing Note 1.

Duverger, M. (1964) *Political Parties*. London: Methuen.

IPPG (2006) 'Comparative Local Studies: The Economic Functioning of Institutions at Local Level'. IPPG Research Guide.

Keefer, P. and S. Knack (1997) 'Why don't poor countries catch up? A cross national test of an institutional explanation'. *Economic Enquiry*, 35(3), pp. 590–602, 1, pp. 213–41.

Khandker, S. (1996) 'Role of Targeted Credit in Rural Non-farm Growth'. *The Bangladesh Development Studies,* Volume XXIV, Dhaka.

Krasner, S. (1984) 'Approaches to the State: Alternative Conceptions and Historical Dynamics'. *Comparative Politics*, 16, pp. 223–46.

Lane, P.R. and A. Tornell (1996) 'Power, Growth and Voracity Effect'. *Journal of Economic Growth*, 1, pp. 213–41.

Leftwich, A. (2006) 'What are Institutions?' IPPG Briefings, Number 1.

LGED (2001) *LGED in Development 1996/97 – 2000/01*. Dhaka.

LGED (2002) *Local Government Engineering Department*. Dhaka.

Lijphart, A. (1991) 'Foreword: Cameral Change and Institutional Conservatism', in L. D. Longley and D. M. Olson eds., *Two into One: The politics and Processes of National Legislative Cameral Change*. Westview Press: Boulder, pp. 9–12.

Lijphart, A. (1994) *Electoral Systems and Party Systems: A Study of Twenty-seven Democracies, 1945–1990*. Oxford: Oxford University Press.

Lijphart, A. (2002) 'Foreword' in J. Woldendrop, H. Keman and I. Budge eds., *Parliamentary Government in 48 Democracies (1945–1998)*. Dordrecht: Kluwer Publishers, pp. 7–8.

Linz, J. J and A. Valenzuela (1994) *The Failure of Presidential Democracy*. Baltimore: Johns Hopkins University Press.

Mahmud, W. (1996) 'Employment Patterns and Income Formation in Rural Bangladesh: The Role of Rural Non-farm Sector'. *The Bangladesh Development Studies* Volume XXIV, Dhaka.

Management Perspective International and Unnayan Shamannay (1998) *Ending Poverty? The Experience of Noradic Support to IRWP/RESP in Bangladesh*. Solna, Sweden.

Management Perspective International/Unnnayan Shamannay (1998) *Ending Poverty? The Experience of Nordic Support to IRWP/RESP in Bangladesh: Project Evaluation Report.* Solna:MPI and US.

March, G.J and J.P. Olsen (1989) *Rediscovering Institutions*. New York: Free Press.

March, G.J and J.P. Olsen (1996) 'Institutional Perspectives on Political Institutions' Governance'. *International Journal of Policy and Administration*, 9(3) pp. 247–264.

Merton, Robert (1968) *Social Theory and Social Structure*. NY: The Free Press

MPI (1998) *Ending Poverty? The Experience of Noradic Support to IRWP/RESP in Bangladesh*. Solna, Sweden.

Mujeri, M.K. (2002) 'Bangladesh: Bringing Poverty Focus in Rural Infrastructure Development'. *Issues in Employment and Poverty*, Discussion Paper 6, ILO, Geneva.

North, D.C. (1990) *Institutions, Institutional Change and Economic Performance*. Cambridge: Cambridge University Press.

North, D.C. (1991) 'Institutions'. *Journal of Economic Perspectives*, 5, pp. 97–112.

Patterson, S.C. (1995) 'Legislative Institutions and Institutionalism in the United States'. *The Journal of Legislative Studies*, 1(4) pp. 10–29.

Patterson, S. C. and G.W. Copeland (1994) 'Parliaments in the Twenty-first Century,' in G. W. Copeland and S. C. Patterson eds., *Parliaments in the Modern World: Changing Institutions*. Ann Arbor: The University of Michigan Press, pp. 1–11.

Peters, B.G. (1999) *Institutional Theory in Political Science: The New Institutionalism*. London, New York: Pinter.

Rae, D.W. (1971) *The Political Consequences of Electoral Laws*. New Haven: Yale University Press.

Ravallion, M. (2004) 'Pro-Poor Growth: A Primer'. Working Paper No. 3242, World Bank.

Reardon et al (1998) 'Rural Nonfarm Income in Developing Countries' a special chapter in T. Redek and A. Susjan (2005) 'The Impact of Institutions on Economic Growth: The Case of Transitional Economies'. *Journal of Economic Issues*, 39(4), pp. 995–1027.

Rhodes, R. (1997) *Understanding Governance*. Buckingham: Open University Press.

Riker, W.H. (1982) *Liberalism Against Populism: A Confrontation between the Theory of Democracy and the Theory of Social Choice*. San Francisco: W.H. Freeman.

Rodrick, D. (2000) 'Institutions for high Quality Growth: What they are and how to acquire them'. NBER working paper no.7540.

Sartori, G. (1994) 'Compare Why and How: Comparing, Miscomparing and Comparative Method' in M. Dogan and A. Kazancigil eds., *Comparing Nations: Concepts, Strategies and Substance*. Oxford, Cambridge: Blackwell, pp. 14–34.

Scott, W.R. (1995) *Institutions and Organizations*. London: Sage Publications, Inc.

Selznick, P. (1957) *Leadership in Organizations*. New York: Russel Sage.

Sen, B. (1996) 'Rural Non-farm Sector in Bangladesh: Stagnating and Residual, or Dynamic and Potential?' *The Bangladesh Development Studies,* Volume XXIV, Dhaka.

Sen, B., M.K. Mujeri and Q. Shahabuddin (2004) 'Operationising Pro-Poor Growth'. A Country Case Study on Bangladesh, World Bank.

Shugart, M.S. and J.M. Carey (1992) *President and Assemblies: Constitutional Design and Electoral Dynamics*. New York: Cambridge Press.

Shugart, M. S. and S. Mainwaring (1997) 'Conclusion: Varieties of Presidentialism', in S. Mainwaring and S. Matthew eds., *Presidentialism and Democracy in Latin America*. Cambridge: Cambridge University Press.

Stepan, A. and C. Skatch (1993) 'Constitutional Frameworks and Democratic Consolidation: Parliamentarianism versus Presidentialism'. *World Politics*, 46, pp. 1–22.

Taagepera, R. and M.S. Shugart (1989) *Seats and Votes: The Effects and Determinants of Electoral Systems*. New Haven: Yale University Press.

The Ministry of Foreign Affairs of Japan (2005) 'Japanese Assistance to LGED (1987–2005): Lessons Learned and Next Steps'. Presentation of the evaluation team for GOJ-GOB Programme Level Evaluation made on 19 December 2005.

'The State of Food and Agriculture' (1998) Rome: FAO.

Varma, S. and P. Kumar (1996) 'Rural Non-farm Employment in Bangladesh'. *The Bangladesh Development Studies,* Volume XXIV, Dhaka.

World Bank (1994) 'Infrastructure for Development'. World Development Report 1994, Washington D.C.

World Bank (1996) 'Government That Works: Reforming the Public Sector'. World Bank, Dhaka.

Yusuf, S. (1996) 'The Non-farm Road to Higher Growth: Comparative Experiences and Bangladesh's Prospects'. *The Bangladesh Development Studies,* Volume XXIV, Dhaka.