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CONTENTS

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Local Level Planning in Bangladesh : A Review of the Upazila Plan

A. J. Minhaj Uddin Ahmad*

ABSTRACT

In the 1980s there was an extensive administrative reform in Bangladesh. One major feature of this reform was the creation of a new institutional framework called upazila administration which combined three elements together – devolution,deconcentration and delegation. This institution was vested with enormous responsibility in respect of local level planning for development activities. However, from the very beginning there prevailed a controversy over the performance of upazila administration in this regard. Moreover, the present government has recently abrogated one major element of the upazila administration- Upazila Parishad (UZP) and set up a high powered committee to examine the entire local government structure of the country. This action has evoked further debate among the different corners. In this paper an attempt has been made to examine the nature of problems that upazila administration confronted in respect of local level planning. This paper argues that the upazila administration couldnot emerge as a strong planning unit due to several reasons: lack of adequate government rules and regulations; problems of proper coordination and linkages among various departments; excessive central control; faulty guidelines; undemocratic process of project selection and the absence of participation by the rural poor; violation of many important formalities; lack of planning tradition and expertise; lack of team spirit; negligence among the public representatives; and financial inadequacy. As a consequence, a good workable plan was not found in any of the upazilas. The absence of a sound plan led to some adverse effects: improper utilization of upazila fund disregarding the merit of its investment; unutilisation of a considerable amount of money; and emergence of skepticism in the minds of different sections of people about the credibility of the upazila administration. However, it also argues that the annulment of the Upazila Parishad without evolving any alternative system has created a vacuum in the local administration.Finally, some tentative measures have been suggested to overcome the existing problems.

I. INTRODUCTION

Local level planning in Bangladesh has a long history. The various levels of organisations, public and private are involved in local level planning in some form or other for quite sometime, though it is not always recognised as part

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of a two-way planning process. There is a wide range of contexts in which such exercises have been undertaken by the Government, Local Government Bodies and the Non-Government Organisations (NGOs). For the government, the contexts in which local level planning has been adopted are: (a) implementation of sectoral programmes after the targets have been disaggregated; (b) formulation of projects by departments/agencies after sectoral allocations have been made; (c) mobilisation of local resources in cash or labour-input on a matching grant principle; (d) collection of data and detailed information from the grass roots for the purpose of allocating limited resources and inputs; (e) focusing on specific needs of areas and groups; and (f) encouragement of self-reliance. The local government institutions have adopted the local level planning against a background of widespread need of several things: (a) mobilisation of local resources, their budgeting for developmental and non-developmental activities; (b) utilisation of funds received from government as grants against specific activities; (c) preparation of long-term plan for development of physical infrastructures; and (d) preparation of group plans to utilise certain inputs, eg. production plan of cooperatives. In case of Non-Government Organisation (NGOs) the setting for local level planning includes: (a) the need to help a specific target group, eg. women, children, landless; (b) imparting certain skills through training to augment the income of the target groups; (c) to popularise social activities aimed at improving the quality of life for disadvantaged group and to popularise appropriate technologies by improving indigenous machines and demonstrating their superiority (Hye, 1980, pp. 17-19). Since the present paper has focused on the local level planning of a particular unit - the upazila

(sub-district) administration - which falls under the purview of local government bodies, it has not gone into further details with respect to the planning process of two other areas: central government and NGOs. Instead, discussion in the successive pages concentrates on the operation of local level planning by the upazila administration.

Sometimes it is maintained that local level planning in Bangladesh within the framework of local government is as old as the local government system itself (Ahmad, Undated, p.1). But the idea did not get any concrete shape until the introduction of the Basic Democracies Order, 1959. This order may be regarded as the first attempt to introduce the idea of local level planning within the umbrella of local government in a systematic manner. On the basis of this order, in the 1960s thana was used as the unit for local level planning under the "Comilla Model." Thana planning covered Rural Works Programme (RWP) and Thana Irrigation Programme (TIP) (Khan, 1981,pp. 2-4; Khan, 1972, pp.1-6; Obaidullah, 1979, pp.1-8; and Sultan, 1974, p.33).The institutional methods followed for plan were: Ward Committee; Union Council, Thana Council and District Approving Committee (GPRB, 1977, pp. 100-118). During the 60s, local level planning under this institutional framework showed some success (PARD, 1963; and Obaidullah 1979,pp.2-3). Though the same idea was in operation after the liberation of Bangladesh in 1971, thana as a unit for local level planning couldnot succeed in achieving the desired results due to several reasons: absence of coordination among the various departments; multiple programmes with conflicting and overlapping objective; interpersonal conflict among the officers; and the ideological muddle.All these factors led to the unsatisfactory performance of the thana

administration in respect of local level planning (Sultan, 1974, pp. 12-30; Obaidullah, 1979,pp. 84-87, pp. 9-10; and khan, 1981, pp. 9-10).

A high powered Committee for Administrative Reorgani- sation/ Reform (CARR) in 1982 identified more clearly the inadequacies of the previous administrative system that directly and indirectly impinge on the capability of thana administration. Some of the inadequacies that directly relate to the thana as identified by CARR are: absence of popular participation in administration; absence of coordination among the field services at the thana level; weak local government system rendered weaker by lack of appropriate political directions; reluctance on the part of the political authority to devolve power to representative institutions at the local level; and weak link of the central government with the people at the grass roots because of weak political and representative structures. The Committee, however, emphasised the continuation of thana (later on called upazila) as the basic unit of administration. It also submitted that elected local government at the district, thana and union levels should take over all the functions of development. Apart from this, democratisation of elected local bodies was to be concurrently supported by a decentralised planning and budgetary system to enable to plan and implement projects of local importance (GPRB, 1982a, pp.III-V; and 54-55).

Against this backdrop, in 1982 the government of Bangladesh under the leadership of the then military ruler General H.M. Ershad, extensively reformed the administrative system and upgraded the thana to upazila (Sub-district) to serve as the focal point of development administration. Moreover, a new tier of local government called the Upazila Parishad (Sub-district council) was

created and a large number of functions were devolved to this institution along with the placement of the central government employees at its disposal (GPRB, 1982b; and GPRB, 1982c). Apart from this, Upazila Parishad (UZP) was assigned the responsibility for formulating local level planning for the development of the locality (GPRB, 1982b; section - 40 of the LGO, 1982). The main objective of the upazila plan was to realise an all round development of the area and people's participation in the development activities (GPRB, 1990,pp.XVI-5; Faizullah, 1988,pp. 46-59; and Rahman, 1985, pp. 58-59).

Theoretically decentralised planning has got a large variety of merits: way of achieving people's right to participate in making decisions about their development; means of distributing political power more widely and reducing undesirable influence of central government; and way of ensuring accurate and detailed knowledge about local needs and conditions leading to relevant plan (Conyers and Hills, 1984,pp. 219-222). It is also argued that decentralised planning can bring about a closer association between national planners and the people and can take into account local goals (Prosser, 1969, p. 211). An examination of the various documents and the speeches of the pioneer of the then reform as recorded in the daily news papers reveals almost the similar arguments (GPRB, 1990, p.XVI-1; GPRB, 1982a; and the Bangladesh Times, Oct. 25 & Nov., 7 1982). It was also argued that the upazila administration occupied a very important position in that it joined three forms of decentralisation together - deconcentration, delegation and devolution within a common institutional framework (Hye, 1985, p-7). Obviously, it implies that the upazila administration could work more effectively as a unit for local level planning. However, many critics were skeptical

about the due role of the upazila administration in this respect for various reasons: absence of adequate rules and regulations in respect of upazila plan: lack of planning expertise; lack of clarity in government policy in respect of people's participation; and absence of harmonious relationships among the elected and government officials; and the negligence among them (Ali, 1986, pp. 89-100; Faizullah, 1988, pp.46-51; Ahmed, 1394,p. 42; Hye and Sultan, 1985, pp. 87-89).

Moreover, with the fall of Ershad regime following the mass upsurge of 1990, the present government has begun to question the viability of the upazila administration. It is argued that this system couldnot set up any example of continuous development as this unrealistic system was foisted from above and because it was inconsistent with the hopes and aspirations of the people and their thinking. Despite pumping in huge amounts of money and resources, the local institutions failed to achieve self-reliance under the upazila system (The Bangladesh Observer, December, 9, 1991). Against this background, the present government has repealed the Local Government (Upazila Parishad and Upazila Administration Reorganisation) Ordinance, 1982 by promulgating a new ordinance known as the Local Government, (Upazila Parishad and Upazila Administration Reorganisation (Repeal) Ordinance, 1991. According to this new ordinance,all public functions at the upazila level will henceforth be performed through executive orders of the government until further orders. Meanwhile, government has set up a high level committee to review all relevant aspects of the country's local government institutions and necessary steps would be taken on the basis of the recommendations of the committee (The Bangladesh Observer, Sunday, November, 24, 1991). The dissolution

of the Upazila Parishad has led to further criticisms among the different groups of people for several reasons: violation of the constitution and complete denial of the local government system as recognised in the constitution of Bangladesh; creation of a grave crisis in the fields of legal and administrative affairs in the absence of any local government between union and district (Azker Kagaj, November, 25, 1991); undemocratic as such an order bypassed the parliament and the opposition political parties; ill-motive of the government for achieving some political benefits for the party-in-power; and establishment of the bureaucrats with full authorities in the upazilas (Babar, 1991,pp.12-13). It apears that the abolition of the UZP has provoked further debate among different corners. The government also set up a committee to examine the issue in order to restructure the local government system. Hence, it is important to examine the role of UZP in respect of local level planning. This may give some insight into the issue which might be useful for planners and policy makers.

With this background in mind, the present paper has tried to analyse the nature and causes of problems of the local level planning at the upazila level and their implications for the development programmes. The discussion will concentrate on some of the following aspects.:

i) Legal and administrative framework for the upazila plan,
ii) Institutionalisation of planning;
iii) Resource mobilisation; and
iv) Impact of the anomalies.

II. LEGAL AND ADMINISTRATIVE FRAMEWORK FOR THE UPAZILA PLAN

The Local Government (Upazila Parishad and Upazila Administration Reorganisation) Ordinance, 1982 provided the legal framework for the upazila system. This Ordinance reorganised the local government system at the thana level and renamed it Upazila Parishad (UZP). According to it, the UZP was headed by a public representative elected on the basis of universal adult franchise. Its membership included both officials and non-officials. All the Union Parishad (UP) Chairmen within the jurisdiction of a concerned upazila were representative members with voting rights. All the functionary heads at the upazila level were official members but did not have any voting rights. This ordinance also assigned UZP the responsibility for local level planning (GPRB, 1982b).

The govenment simultaneously issued another resolution known as the Resolution on Reorganisation of Thana Administration, 1982 which gave the administrative framework for the upazila system. According to it, the government functions at the upazila level were divided into two categories - retained subjects and transferred subjects. Responsibility for regulatory functions and major development activities of national and regional coverage was retained by the central government. Responsibility for all other development activities was transferred to the UZP. In order to assist the parishad in the performance of its various activities, the services of the officers of various departments dealing with transferred subjects were placed at the disposal of the UZP and those officers were accountable to the UZP (GPRB, Memorandum, 1982c). Over and above, a mid-level officer of the Bangladesh Civil Service, designated as the Upazila Nirbahi Officer (UNO) was deputed to the

UZP. He, as a Principal Staff Officer (PSO) to the UZP Chairman, was to assist the latter in the performance of his duties (GPRB, 1983a, pp.29-30).

In addition to the above documents, government issued two important guidelines - one in 1983 and another in 1985-which gave an elaborate outline of the upazila plan. These two guidelines indicate that the UZP should prepare a five-year development plan and maintain a Upazila Plan Book on the line of previous thana plan book so long maintained by the Development Circles. The plan book should be updated every year. These guidelines also emphasised that the UZP was to undertake socio-economic survey and studies in order to prepare its plan and projects. Besides this, the UZP plan should undertake those projects which could be planned and implemented with the resources available with it and which were not adequately covered by the national projects. Moreover, the UZP should not take up such schemes as might duplicate activities undertaken in the upazila by the government, Divisional Boards and other agencies (GPRB,1983; GPRB, 1984 pp.100-112; and GPRB, 1985).

Those guidelines also specified the scope and the mechanism of the upazila plan. The scope of the UZP plan was to be confined within the transferred subjects which include: agriculture including extension services, input supply and irrigation; livestock; primary education; health and family planning; rural water supply and sanitation programme; Food for Works Programme (FWP); cooperative and cooperative based rural development programme; and social welfare (GPRB, 1983; & GPRB 1984 pp. 101-112).

As regards the process of plan formulation, the guidelines suggest that there were five stages involved in the upazila planning: project identification; project

formulation; feasibility study of the proposed project; project selection; and project approval. Each stage involved a group exercise which was to be done by committee to be formed with public representatives, officials and the local elites. The final approval of the project was to be done on the basis of consensus arrived in the parishad meeting (GPRB, 1983; and Ahmed, 1394 (Bengali year), pp.37-38).

The guidelines also spelled out some mechanisms with respect to the management and implementation of projects. According to the guidelines, the UZP was to identify and nominate the concerned developmental officer to be responsible for implementation of a project. A Project Committee consisting of 5-7 persons might be constituted by the UZP for supervision of the work of each project. He was also to act as the chairman of the project committee. Besides this, the Upazila Planning and Evaluation Committee was to monitor and review the progress of implementation of development projects at least once a month and place their report before the UZP with observations for consideration. In addition, the parishad might constitute a 3-5 member 'Project Inspection Committee' (PIC) to inspect the work of the project of UZP during execution in the field. The Committee was to place its inspection reports before the UZP (GPRB, 1984, pp. 107-109).

III. INSTITUTIONALISATION OF PLANNING

The wide range of activities under the UZP planning demands an efficient organizational network. The various studies, however, show that the upazila administration couldnot emerge as an effective unit for local level planning and hence institutionalisation of planning was far from reality due to several reasons.

Problems of Coordination

It is submitted that the then government did not make any room for setting up a planning team, despite government's repeated emphasis on various documents about the responsibility of the UZP with respect to Five Year and Annual Development Plan. Hence, though officers were deputed there, their traditional pattern of behaviour was found detrimental to the development of a planning team. Moreover, in the absence of such a planning team, both horizontal and vertical coordination in planning functions became inoperative. The problem of integration was further compounded due to the abolition of the past method of District Approving Authority and the inadequate explanation about the coordinative function of the UZP Chairman and the UNO as effective leaders in planning. Finally, the guidelines did not have adequate provisions for operational framework for both the UZP and its functionaries about the actual preparation of an upazila plan. As a result, difficulties cropped up in spelling out the various linkages in planning exercise -- top--down, bottom-up and horizontal. So there did not exist any proper coordinative functions in respect of local level planning and the achievement of proper combination of multi-disciplinary activities of the UZP was also in a serious deadlock (Faizullah, 1988,p.14).

The problems of integration were also due to some other factors which can be explained more clearly with reference to the planning of water resource development. Water resource development is an important area that came under the purview of upazila plan. It is argued that the successful realisation of local level planning for water resource development demands the integration of it with the national planning process. This is essential for various reasons: avoidance of any duplication in efforts;

streamlining the most rational phasing of projects at different social scales; and assurance of maximum popular participation in decision-making process. However, the need for integration raises the issue of defining the relationship between local councils, government departments and the parastatal bodies like the Bangladesh Water Development Board (BWDB); the Bangladesh Agricultural Development Corporation (BADC); and the Bangladesh Rural Development Board (BRDB). There existed many problems in defining the relationship: interdepartmental rivalries; function-area conflict; and lack of positive attitude on the part of the project-based bureaucracy with regard to their accountability to the public representatives (Ali, (undated), pp. 92-93); Ahmad, 1990, pp. 16-22; Ahmad, 1991a, pp. 30-31; Khan, 1986a, pp. 24-25; Khan 1987a, pp. 360-361; Murshed, 1988, pp. 37-42; and Haque, 1989, p. 80).

Another major impediment to the integration of national planning with local level planning was that boundaries of all planning units did not comply with the single upazila boundaries. It was, therefore, difficult to answer at what level should planning of different types of water resources projects should take place (Ali, (undated), p. 94). The problem of integration was further compounded following the unplanned privatisation of irrigation equipments. The wholesale privatisation of Shallow Tubewells (STWs) has brought about a total breakdown of the local level planning process in relation to planned and rational use of ground water resources (Ali, (undated), p. 98; and Rahman, 1985b, pp. 90-91). Finally, unplanned import of irrigation equipment by the government without any regard for farmer's need and climatic conditions of the country have resulted in the supply of a variety of models. The implication of all these

anomalies for upazila administration was that it couldnot develop as a powerful unit for local level planning (RDA, 1987, p.6).

Excessive Central Control

There is a lot of criticisms against the nature and extent of central control over the UZP. One criticism is that though the UZP was depicted as an instance of administrative devolution, it was a myth. The Resolution of the government in 1983 enumerated the regulatory and major development activities retained by the government. It is assumed that the rest of the functions not mentioned in the resolution lies within the jurisdiction of the UZP. But doubts were expressed about the certainty of this resolution, for this was an executive order and might be changed any time as and when government desired. Besides this, the resolution did not provide a complete list of functions of national government. Again, section 26 of the Local Government Ordinance, 1982, empowered the central government to transfer any institution or service maintained by the UZP to the central government and vice versa. Indeed, the government retained extensive powers to regulate the UZP in various ways (Khan, 1986a, p. 21; and Haque, 1989a, pp. 69-88).

Another major weakness was that though the UZP was assigned the responsibility for local level planning, it was not made a statutory obligation. It might become an obligation when the UZP would be directed by the government to do so. Apart from this, the UZP plan was subject to the sanction of the government. The government should specify the manner of its implementation and the agency responsible for it (GPRB,LGO, 1982b). In doing so, the law had to take the wind out of the sail of the UZP (Faizullah, 1988, p. 46). It is also argued that the main intention of different

documents, such as the Local Government Ordinance 1982 and other resolutions and directives was to tighten government control over the activities of the upazilas (Khan, 1986b, p. 121; and Khan, 1987a; pp. 335-337).

Excessive central control had many damaging effects on the autonomy of the UZP. First, the UZP did not have enough autonomy in resource mobilisation. As such it was heavily dependent on central government for financial support. It was also tied to the wishes of the central government as strings were attached to all grants. The UZP, therefore, did not have full freedom or choice over their activities (Ahmad, 1989, p. 70).

Second, excessive control, in many cases, established a vicious circle of dependency and patron-client relationships between the central government and the UZP chairman. This tendency became more dominant during the later part of 1980s when the UZP Chairman faced a stiff opposition from the Members of the Parliament (MPs) and the opposition political parties who urged the government to curtail the power and authority of the UZP Chairmen. The then central government, however, promised to protect them from such threat. The government, in return, used them (UZP Chairmen) in resisting the anti-government movement of the opposition parties. Thus, financial grants, political patronage and administrative support were more important than anything to them to maintain their privileged position over the rural masses (Ahmed, 1987, pp. 77-83). Another dimension of patron-client relation relates to the misuse of resource by the civil and political bureaucrats. Both civil and political bureaucrats at the top echelon in collaboration with local level officials pressed the UZP Chairmen to finance some unproductive activities. In case the latter refused, they used to persuade the government to cut down the grants for concerned upazilas. So, out of this fear, the UZP Chairmen had to

cooperate with the bureaucrats in managing several misdeeds including the wastage of the parishad fund (Ahmad, 1991c, pp. 136-137).

In such a situation, though UZP was vested with the authority to undertake local level plan, it had to work under the tight control of the central government through its various ministries and agencies - Cabinet Division, Establishment Division, Planning Commission and so on. In doing so, the UZP was strictly guided by the central government in respect of its local level planning. Hence, too much central control was highly prejudicial to the planning capability of the upazila (Murshed, 1988, pp. 34-45).

Some Inherent Faults in the Guidelines

Some critics argue that the government guidelines and instructions with regard to the UZP planning were not clear in many respects. First, government guidelines and instructions with regard to UZP planning were mostly directional in nature and they were inadequate to guide the UZP and its functionaries as to the actual art of preparation of plan. In other words, the guidelines suggested a mechanism for selection and processing but did not give any guidance regarding the formulation of a sound upazila development plan in terms of professional standards. The rules and regulations designated the UP chairmen as the final authority for identification of schemes disregarding the genuine role of the government officials (Faizullah 1988, p. 49). The UP chairmen themselves used to identify and approve schemes and the officials were found as silent spectators (Ahmed, 1394 (Bengali year), pp. 39 & 42; Ahmad, 1991b pp. 104-105). Since the official members did not have any voting rights, many of them were not cooperative as far as technical advice was concerned (Ali, 1987, p. 147; and Ahmad,

1991b p. 105). Moreover, the officials suffered a sense of inhibitition lest their projects were rejected by the representative members (Saqui and Mukabber, 1989, p. 53; Ahmad 1991b, pp. 95-133). As a result, many technically unsound projects were approved by the UZP (GPRB, 1990, p. XVI-4).

Second, as regards the strategies of formulation of the upazila plan, a major thrust of the government guidelines was on the sectoral approach. The sectoral approach stressed that the different activities of the UZP were to be divided into several sectors in the pattern of national plan. However, the classification adopted for upazila plan under this sectoral approach did not match the national classification for plan. As a result, various linkages- topdown, bottom-up and the horizontal - couldnot be worked out (Faizullah, 1988, p. 51). Besides this, rigidity in the guidelines regarding the sectoral allocation was also considered a great problem, as it discouraged the interchange of fund among the different sectors. Thus due attention to many important projects was not possible (Khatun, 1986, pp. 69-70).

Third, there is a topographical variation. Local level planning is governed by the geo-physical setting of the locality. In case of upazila planning, the proper appreciation of topographical peculiarities was in many cases lacking. The government guidelines divided the range of activities to be undertaken by the UZP into various sectors and then prescribed limits to financial allocation in terms of percentage ceilings. But this strategy of sectoral ceilings could be applicable in flood-plain upazilas only and it was difficult to maintain such rigidity in other upazilas. Consequently many upazilas were in a dilemma of violating the guidelines and not utilising the money received as development grants (Faizullah, 1988, p. 54).

Fourth, according to the government guidelines issued by the Planning Commission, the UZP planning was to follow a prescribed allocation pattern. But the UZP faced difficulties in selecting projects in sufficient numbers, complying with the set allocation pattern. Sectors like agriculture were such cases in point. As the guidelines suggest, every year a particular percentage of allocation of Development Assistance Grant was required to spend in these sectors. But only a few schemes were undertaken in this respect that included the setting up of nursery and demonstration farms. The same was repeated every year leading to wastage of public money. Actually the activities under these sectors are a matter of private concern of individuals, whereas the scope of public sector investment at the local level is mainly limited to extension and training. This again did not give enough scope for the UZP. Hence, the strategy of providing a higher allocation tied to those sectors created an impediment to the development of a sound upazila planning (Faizullah, 1988, p. 55).

Undemocratic Process of Project Selection and Lack of Participation of the Rural Poor

The successful local level planning needs the active participation of all the members of the parishad -- official and representative members. It is seen from a few studies that the concerned groups couldnot participate in the planning process due to several reasons. First, in some cases, there was an undemocratic process with respect to the final selection of projects. Final selection of projects was done outside the parishad forum by the representative members in consultation with the Upazila Nirbahi Officer (UNO). Thus, in many cases, the idea of participatory development was absent among the local leaders (Ali, 1987, p. 147). No specific argument has been placed as a cause of this situation. Nevertheless, as the various studies suggest, illmotive for achieving vested

interest, lack of respect for democratic decision-making process and interpersonal conflict among the concerned officials appear to be the likeliest explanations for this undemocratic process (Ahmad, 1990; Ahmad, 1991; Ali, 1986).

Second, excessive concentration of power in the hands of the UZP Chairman also acted as a hurdle to the participation of the concerned groups. It is argued that the UZP chairman was vested with so much legal and extra-legal power that it hindered the real participation by other members. The chairman could ignore, by-pass and influence the parishad in any way he wished. So excessive concentration of power in a single person turned the upazila into a different type of personalised and centralised institution. The decentralisation scheme concentrated more and more power, function and role at the upazila level, sometimes at the cost of the other grass roots level organisations. The local institutions like the UPs were tied up with the system as recipient-client institution integrated under the bond of institutional membership (Ahmed, 1987, p. 87-88).

This argument is not fully baseless. Some studies show that there developed a patron-client relationship between the UP and the UZP chairmen in respect of project selection and resource allocation. Allocation for different projcts depended on how much the representative members could manipulate the UZP chairman when the projects were finally approved (Khatun, 1986, pp. 44-47). In some cases, it is also seen that the UZP chairman maintained a policy of differentiation with respect to the distribution of projects and the allocation of resources for their implementation. He favoured those UP chairmen who were his close associates, friends and political workers. In return, they blindly supported the parishad chairman in handling different matters without any regard

for right or wrong. He, on the other hand , tried to harass the others who were his alleged opponents in two ways: delay in releasing the fund and allocation of less resources compared to the others (Ahmad, 1991, pp. 103 & 125).

Third, it is contended that there was a lack of effective participation of the rual poor in the upazila plan as discussion in the planning process in respect of identificatin and selection of projects was limited to the local elites only. Thus, the views of the rural poor remained unrepresented and as such, it was unlikely to reflect their interest in the planning process (Ahmed, 1394 (Benglai Year), p. 42).

Violation of Many Important Formalities

Many upazilas have been found to violate some basic formalities with regard to the planning and implementation of development programmes. First, in the 1960s the concept of plan book was introduced in this country in consideration of the need for developing necessary physical infrastructure and attaining self-sufficiency in food. In a recent study, it has been found that due attention was not given to this matter. The various instructions and guidelines, as mentioned in the plan book, were hardly consulted. One part of the plan book dealing with irrigation has been found completely untouched. The study has identified three factors responsible for this situation: inadequacy of pre-determined plans for regulating the subsequent development activities in the face of rapid increase in development assistance fund; difficulty in preparing long-term plan on irrigation due to the presence of a number of agencies in an uncoordinated manner in this field; reluctance of the representative members in accepting any plans prepared by their predecessors (Ali, 1987,p. 148).

Second, according to the government rules, a committee was to be formed for project selection and preparation. But an examination of the planning process of several upazilas shows that most of the upazilas did not form the committee for this purpose. Even where such committee existed it hardly visited the Union Parishad to finalise the process of project identification and selection. As regards the implementation, supervision and monitoring of projects, according to guidelines there should also have been two committees - "Project Committees" and "Project Inspection Team". But there has hardly been found such committees in the upazilas. In most of the cases, the Chairmen and members of the UPs were responsible for implementation and supervision of projects (Ali, 1986, pp. 139-141; Khatun, 1986, p. 52; Ahmad, 1989, pp. 91-92; Ahmad, 1991b, p. 101; and Hashem, 1988, p. 210).

The anomalies in regard to the operation of the committee may be attributed to two reasons. First, the UZP Chairman tended not to regard committees as important. As for instance, in many upazilas the projects were not scrutinised either by the committee or by the parishad. Final selection was made individually by the UZP Chairman ignoring all the necessary formalities (Khatun, 1986,p.45). Second, negligence of both official and representative members was another cause of this situation . In a survey in two upazilas, it has been found that majority of the government officials were not even aware of the existence of various committees. Obviously, this is a clear indication of the non-functioning of the committee system (Hoque, et al (undated), p. 50).

Lack of Planning Tradition and Expertise

A sound local level planning depends to a large extent on a clear perception of the present situation of the locality. An analysis of the situation on the basis of such

understanding is essential as a background of plan preparation. But there is a lack of understanding and visualisation among the government and elected officials due to many reasons.

In the past, the activities in the field of agriculture, fisheries, livestock and primary education had always been planned centrally. As a result, local level planning has never been a tradition with regard to the functions assigned to the upazila (Faizullah, 1988, pp.53-54). Moreover, there was a lack of appropriate training among the concerned functionaries. Hence, they had not developed necessary expertise in planning in their respective areas of operation (Ali, (undated), p. 103; Saqui and Mukabber, 1989, pp. 43-44; and Faizullah, 1988, p. 54). Lack of planning capability was equally true in case of the public representatives (Khatun, 1986, pp. 32-47; and Hye and Sultan, 1985, pp. 108-110). Apart from this, some critics argue that at the upazila level there was no officer entrusted with the responsibility for preparing an overall plans. Initially there existed one officer called Upazila Planning and Finance Officer (UPFO) who was supposed to do the planning exercise but later on this officer was renamed as the Upazila Finance Officer (Lein, 1989, p. 59). As a result, project identification and selection were not made properly in the absence of knowledge on the part of both the departmental officers and the representative members regarding the socio-economic conditions and technical and feasibility studies (Khatun, 1986, pp. 32-47). Some upazilas even did not make any five-year plan in the absence of technical manpower (Zahangir, 1989,p.155). In addition, it is seen that the functionaries did not understand many important instructions of the government. As for instance, the Upazila Project Proforma (UPP), an important tool for upazila plan, demanded detailed information many of which were quite sophisticated in nature and these were

beyond the capability of the upazila officials.Even the UPP as prescribed by the Planning Commission for preparing projects was not used in many cases (Faizullah, 1988, pp. 51-57). Consequently, there was an insufficiency in micro level data in some cases. It is also maintained that the upazila administration was not competent enough to manage the level of sophisticated data that might come in future in some areas (Ali, (undated)p. 103).

Lack of Team Spirit

As discussed earlier, the upazila administration was the composite of a large variety of people - government and elected officials. So the successful planning was largely dependent on the sincere cooperation among the concerned people. But in many cases, there did not exist a good relation among them because of their difference in background, attitude and belief. Their attitude towards each other was guided by distrust, hatred and cynicism. They did not accept each others in good spirit. The officials particularly received very insensitive remarks from the UNO and the representative members in response to their technical or professional advice (Ahmad, 1991b pp. 74-103; Ali, 1986, pp. 139-140; and Khatun, 1986, pp. 32-39) Moreover, a recent study reveals that the UZP Chairman, the UP Chairmen, the UNO and the other government officials were involved in local politics and interpersonal conflict in various ways (Ahmad, 1991b, pp. 208-209).

Thus, the team spirit required for upazila plan was virtually non-existent. It is seen that in many cases, the opinions of the departmental officers were disregarded in respect of preparing upazila plan. The personal choice of the UZP Chairman had commanding influence over the scene with respect to the final approval of the projects (Khatun, 1986, pp. 32-47). Moreover, on many occasions,

the UZP chairmen indulged in corrupt practices and abuse of authority in connection with the project selection, approval and implementation. The entire process was done in total disregard of the majority of the members. This kind of abuse of authority, sometimes, led to violence between the supporters of the UZP Chairman and the representative members which culminated in the physical assault on the latter (Ali, 1986, pp. 141-145).

Lack of Interest Among the Public Representatives

Another impediment to the upazila plan was the lack of interest among the public representatives. This lack of interest in planning may be attributed to several factors. First, there was some uncertainty with respect to the amount of money and its time of availability. In one study it has been seen that the amount of fund available for the upazila and the actual date regarding the availability of funds varied substantially from year to year (Lein, 1989, pp. 159 & 181).

Second, many elected local leaders were disinterested in public service. They were rather more interested in short-term personal gains (Ahmed, 1991b, pp. 99 and 104; Lein, 1989, pp. 158-159; and Hye and Sultan, 1985, pp. 87-89). It is also submitted that the comparatively rich people dominate rural power structure and institution. They are usually unconcerned about the genuine interest of the rural poor. Many socially profitable projects are not initiated as they may step up the demand for labour, strengthen the bargaining position of labour and increasing the likelihood of their escaping from the bondage of patron-client relation (Sadrel, 1985, p. 327).

Finally, there was a lack of easily identifiable activities. The UZP Chairman and other representative members preferred to undertake these projects which had some demonstrative value in their respective areas. A project without any demonstrative value did not draw their

attention. The same was also true in case of departmental officers. As most of the sectors under transferred subjects did not fulfil the criterion of demonstrativeness, they were out of focus in upazila development planning (Faizullah, 1989, p.54). It is suspected that all these combined together constituted a strong disincentive for a long-term planning at the upazila level.

IV. RESOURCE MOBILISATION

A fundamental requirement associated with UZP plan was the resource mobilisation. Availability of adequate financial resource is essential for formulation of any plans as well as for its implementation. It is submitted that the authority in allocating financial resources and the level of influence in allocating it by a local authority are important factors in a formula for decentralisation. In developing countries, the people do not have enough control over the government's activities. Hence, there is a need for formal decentralisation of resource allocations (Mawhood, 1985,p. 14). But in case of upazila administration in Bangladesh, resource allocation was not adequately marked by decentralisation. Various studies show an excessive dependence of the UZPs on government grants and a lethergy among them in generating new resources (Saqui and Mukabber, 1989, p. 57; Hye, 1985, p.115; Ahmad, 1989, p. 57; and Haque, 1989, p.4).

The sources earmarked for UZP did not generate substantial income. The data from 53 upazilas show that the average tax collection per upazila during 1986-87 was Tk. 44,916.00 and average resource collection rate was about Tk. 0.7 lakh per upazila. It is also important to mention that about one--fourth of the UZPs in Bangladesh failed to raise any revenue from their respective jurisdiction (GPRB, 1990, p. XVI-7). Local-centre conflict has been identified as one of the main reasons for this

moribund condition. It is submitted that the UZP was responsible for direct taxes which involved many difficulties. By contrast, the central government is entrusted with the responsibility for indirect taxes which are relatively easier to realise. Revenue-sharing may be a possible measure to solve this problem relating to resource allocation. However, this measure needs a constitutional agreement. As upazila set-up was not the product of any such constitutional agreement, the central government did not come to any concrete decision over the issue of unconditional grants. Hence, the chance of any improvement over the resource mobilisation was very bleak (Khan, 1986, pp. 19-20). It is important to note that local-centre conflict is not something unique in Bangladesh. This is a concern of all irrespective of both developed and developing countries. Schroeder rightly argues that there lies a great deal of difference between central and local government over the fiscal decentralisation. Though the central governments express a positive view for the autonomy of local government in fiscal decision - making, they hardly felt it expedient to curb their full control over some of the sources of revenue that were originally collected centrally. Indeed to do so is not fiscally prudent (Schroeder, 1985, pp. 136-137). But the degree of this conflict in case of Bangladesh seems to be very acute.

The political economy school agrues that the poor local resource mobilisation may be explained in terms of the dynamics of class interest. This group maintains that stagnation starts with the major class interest of the local elites who intend to retain the hegemony over a semi-feudal village economy. Local elites are also enthused by the central elites in their desire to misappropriate the public fund, for their prime motive is to achieve and

retain the allegiance of their counterparts at the local level. So the abiding interest of the central elites is to ensure their own future by building a patron-client linkage with the village elites. In other words, the central government is politically more interested in using decentralisation to build a political support base in the countryside than in promoting self-reliance at the local level. Thus, local resource mobilisation, although very important, is brushed aside by local and central elite. Thier interest is, on the other hand, shifted somewhere related to personal gains by strengthening the political ties between the centre and local (Blair, 1989, 234-242).

Another important issue, albeit contrary, is that even if local government were eager of resource mobilisation for development purpose, there did not exist any real structure or mechanism through which it could spend such revenue. As a matter of fact, there was not even an official specifically responsible for local revenue raising. In other words, a vacuum lay as to the institutional framework for handling the local resource mobilisation (Blair, 1989, p. 235).

Another reason is that UPs used to collect taxes on certain items that were transferred to the UZPs (Ahmad, 1988, p. 55). The UZPs knowingly remained silent in this regard in that the execution of the tax structure was expected to affect the income of the UP and any adverse effect on the UP income might lead to conflict with the UZP Chairman. This apprehension discouraged the UZP Chairman to be active in administering the tax structure (Ahmad, 1989, p. 75). In view of this situation, resource mobilisation by UZP was very poor and as such it couldnot make any noticeable expenses in respect of development activities. Major portion of their income was spent for meeting establishment requirements (Saqui and Mukabber, 1989, p. 54). This financial inadequacy probably circumscribed the autonomy of the UZP in respect of planning.

V. IMPACT OF THE SITUATION

The absence of a sound plan led to some damaging effects. First, it created some anomalies with respect to the utilisation of government grants. All the UZPs in the name of planning, prepared list of schemes with estimates of cost. In this process, the UZP had a propensity to give more stress on communication and transport sector disregarding the importance of other sectors. Moreover, there was a tendency to distribute government grant union-wise without any merit of such investments or priorities. As a consequence, sectoral ratio of investment was violated. A lion share of the government grants was spent in non-productive sectors (Faizullah, 1988, pp. 51-58; Saqui and Mukabber, 1989, pp. 55; and GPRB, 1990, p. XVI-4). The year-wise utilisation of Upazila Development Grant during the last five years (from 1983-84 to 1988-89) also show that a good amount of money remained unspent every year. The utilisation rate ranged from 53% to 84% (GPRB, 1990, p. XVI-3). Second, because of this inefficiency and other anomalies, doubts lurked in the minds of the different corners of the people about the credibility of the upazila administration. Many critics had an extreme view about the upazila system and challenged its viability. They argued that upazila administration, a brain -child of the past autocratic government to perpetuate its rule at the grassroots level, had eaten up the country's national revenue since its inception in 1983 with no striking change in the life style of the people. On the other hand, it became a den of corruption, administrative inefficiency, malpractices and political and social bickerings in the name of so-called development (The Bangladesh Observer, June, 7, 1991, pp.1 & 9).

VI. CONCLUSION

The experience of local level planning in Bangladesh is not a perfect one and it is still in a somewhat nascent stage. It also points to an important fact that decentralised planning is a hard path and there exist some major limitations and constraints. It is, however, very difficult to generalise any thing on the basis of the discussion in the present article, for the picture emerged from the foregoing analysis is just a tip of the iceberg only. In many cases the views of the critics appear to be inconclusive as their arguments are based on mere prediction and they are not substantiated by any empirical data. Moreover, some of the critics have not spelled out any concrete solutions. Over and above this, there have been found contradictory arguments on certain issues. For instance, many argue that excessive power was concentrated in the hands of the UZP Chairman following the adminis-trative reform in 1982. But in contrast to this, many also argue that there prevailed excessive central control over the UZP that ultimately affected the authority of the UZP and its chairman. Moreover, the reform measures did not specify the leadership role of the UZP Chairman with respect to the local level planning. This kind of controversy and lack of sufficient data call for further research in order to reach any firm conclusion in this respect. Nevertheless, some tentative conclusions may be drawn.

First, there was some muddle in the then government thinking as the rules and regulations regarding local level planning were not fully clear in many respects: lack of clear provision for setting up a planning team; lack of guidance for planning in terms of professional standards; lack of a common boundary for different national agencies and the upazila unit in respect of local level planning; absence of clear provision for the participation of the rural poor; and lack of coordination and integration. Apart from

this, rules and regulations allowed excessive concentration of power in the hands of the central government at the cost of the autonomy of the upazila administration. Second, there have been found some problems that relate to the attitudes, behaviour and competence of those involved in local level planning. They include mainly: lack of team spirit; negligence among the government and the elected officials; lack of expertise; and patron-client relation between the central and local government. This patron-client relation also extends to the relation between the UZP & UP. It is important to note that these problems cannot be isolated from one another. Rather they are interrelated in that in many cases they reinforced each other. In other words, many problems of the upazilas plan appear to stem from a galaxy of complicated factors which were in many ways intertwined. All these factors combining together created a serious hurdle to the growth of upazila as a viable unit for local level planning.

At this juncture, it is important to mention that the problems of the decentralised planning are not something unique in case of Bangladesh. The early experience of many Third World countries in decentralised planning also evinces several problems of similar nature (Chambers, (undated), ILGS collections; Sundaram, 1989, pp. 20-37; Thamber, 1984, pp. 113-115; Rahman (undated); and Guerrero, 1984, p. 80). This suggests that decentralised planning is not working anywhere with absolute perfection. So, it may be unwise to get disheartened by looking at the wide range of the problems in country like Bangladesh. Rather, the problems may be taken into account with a constructive attitude. Any experience leaves some lessons which can be utilised for future improvement. So the recent experience of the UZP in local level planning is not altogether useless. Instead, timely analysis of the experience might have helped the

planners, policy makers and practitioners in revealing the mistakes and taking the right kind of action. If seen from this perspective, abrogation of the UZP without evolving any alternative system by the present government seems to be an impractical and unjustified step. Over and above, the present decision has created a vacuum regarding the people's representation in the upazila administration in the absence of any local government unit at the upazila level. On the other hand, such decision has established the bureaucrats with full authorities in the upazilas. So, the government could have allowed the system to continue with gradual transformation of it in the light of the rcent experience.

However, it may also be conceded that there were many disruptive elements in the local level planning process of UZP in Bangladesh. So they call for an appropriate action with remedial measures. In consideration of the above facts, revival of the UZP along with some tentative measures may be suggested to overcome the present deadlock; provision for setting up of a regional planning authority at the district level to ensure proper interaction between upazila plan and macro plan; circulation of government rules and regulations with adequate explanation in respect of the upazila plan; setting up of a mobile planning cell consisting of multidisciplinary experts under the direct control of the Ministry of Local Government, Rural Development and Cooperatives Division to assist the upazila administration in the performance of its planning function; arrangements of training course on planning for the officials and the public representatives at the upazila level; maintenance of continuous linkage between various central agencies and upazila administration for collection and preservation of data in various fields necessary for planning; strengthening of upazila administration in terms of manpower by recruitment of staff from relevant profession

for different nation-building departments and setting up of a planning unit with full-time experts; and enhancement of financial capability through formal decentralisation of resource allocation in two ways - transfer of more resourceful areas to upazila administration and introduction of revenue-sharing method in some substantial areas; and introduction of the system of matching grants to avert the present negligence among the elected officials in local resource mobilisation.

Finally, it may be said that there is no universal package of solutions to such problems. Moreover, the suggested measures are not exhaustive one. The measures proposed above are likely to be helpful in bolstering the planning capacity to improve the situation. But the ultimate success, perhaps, depends on the goodwill, sincerity and dedication of the concerned people and the promptness of the government in taking timely action for removing bottlenecks. Apart from this, it may be borne in mind that it is not possible to solve all the problems in a single leap. Hence, Mawhood has rightly submitted that sufficient time is required for a new institution to grow and flourish. The experience of many developing countries show that local government structures have been tried and hastily uprooted as they do not produce any instant results. In a political body both public representatives and officials should be given adequate time to gather experience in order to streamline the decentralised institution. The required time may vary depending on the level of existing circumstances and culture (Mawhood, 1989, p. 255).

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DEVELOPMENT OF JAPAN AND ITS RELEVANCE FOR BANGLADESH

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ABSTRACT

This paper basically aims at identifying the factors responsible for - i) rapid development of Japan and ii) hindering development of Bangladesh. Japan and Bangladesh have close similarities with respect to natural resources base and high population density. Economies of both the countries were shattered by war, although war damage of Japan was more devastating compared to Bangladesh. Both the countries received massive external assistance for reconstructing their economies. In spite of all these similarities between these two countries Japan has made substantial development because of her educated, skilled and disciplined man-power. Bangladesh, on the other hand, is left far behind due to illiteracy and other socio-political factors.

INTRODUCTION

Japan is one of the richest countries in the world. In contrast, for long time, Bangladesh is known as one of the poorest countries in the world. At present, Bangladesh is facing so many problems, that if any one is interested to study on any economic problem, perhaps Bangladesh is one of the best place of study in the world as it is facing not only economic problem but also other social and political problems. On the other hand, if some one is interested to know the process of development in action, perhaps Japan is one of the best place in the world for this, because Japan has shown the whole world how a country without natural resources (minerals) can become one of the strongest economic powers in the world. It is not only the Asian countries, the western developed countries also need to know the secret behind miraculous

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development of Japan. What Japan has done only in a few decades without any natural resources, many western highly developed countries having abundant resources took several centuries to do that. The reason for comparing Bangladesh with Japan, the countries which are now at the opposite pole of development process, is that these two countries have close similarities with respect to possession of natural resources, high population density, heavy pressure on limited agricultural land, etc. Again, economies of both the countries were shattered by war. Of course, World war II had totally collapsed Japanese economy while liberation war of Bangladesh in 1971 partially collapsed Bangladesh economy. While Japan got massive support from US government, Bangladesh received generous aid / loan from different countries of the world to cover losses of war. In spite of all these similarities between these two countries, Japan is developing very fast while Bangladesh is lagging behind. The main aim of this paper is to examine the factors which are helping quick development of Japan and the factors which are responsible for slow development of Bangladesh.

SIMILARITIES AND DISSIMILARTIES IN THE ECONOMIC CHARACTERISTICS OF BANGLADESH AND JAPAN

This section discusses some important similarities and dissimilarties in the economic characteristics of the two Asian countries: Bangladesh and Japan

Land :

Japan is 2.58 times bigger than Bangladesh in terms of total land area. However, most of the land in Japan is mountainous while except small areas, almost all land in Bangladesh is flat. As a result, although Bangladesh is smaller, she has more flat land than Japan. Again, in

terms of agricultural land Bangladesh has more cultivable land than Japan which is about 1.69 times higher. Therefore, natural condition of land for agriculture is favourable for Bangladesh than Japan. However, the nitrogen content and presence of organic matter as well as other nutrients are low in the soils of Bangladesh compared to Japan. This is because of the fact that the soils of Bangladesh are subject to heavy rainfall which washes away the nutrients and high temperature for a continuous long period breaks down the humus. Again, throughout Bangladesh continuous cropping without adding adequate soil nutrients exhausts natural fertility. This indicates that Bangladesh soil needs application of more fertilizer compared to Japan.

Population:

In terms of population, Japan stands seventh in the world while Bangladesh stands eighth. Density of population in Bangladesh is more than double compared to Japan. However, if we consider population density of Japan for flat land only (excluding mountainous land), it stands 1.67 times higher per square kilometer than that of Bangladesh. Therefore, in fact population pressure on land in Japan is much more compared to Bangladesh. Again, the nature of population problem in Bangladesh is different from that of Japan. Proportion of population of working age group in Bangladesh is much less than Japan. About half of the total population in Bangladesh belongs to the age group of 0 to 14 years, the corresponding percentage for Japan is only about 22. Again, unlike Japan,the women in Bangladesh who represent about half of the population of working age do not participate in different activities with men. Therefore, the percentage of working population in Japan is much higher compared to Bangladesh. Moreover, life expectancy of Japanese people is much higher (76 years for male and 82 years for

female) than Bangladeshi people (56 years for male and 55 years for female). So a Japanese can contribute more in the process of development than a Bangladeshi throughout his life, because on the average he lives about 1.5 times more than a Bangladeshi. Moreover, about 25 percent of the children in Bangladesh die before attaining 5 years. So they just consume and die without contributing anything to the society or the economy. Again, both birth rate and death rate in Bangladesh are much higher compared to Japan which result in high population growth rate in Bangladesh. The population in Bangladesh is growing at a much faster rate than in Japan which indicates that in near future Bangladesh will exceed Japan in terms of population. Therefore, although the existing population of Japan is more than Bangladesh, the dimension of population problem is different of these two countries.

Table-1: Some Basic Characteristics of Land Population of Japan and Bangladesh

	Japan	Bangladesh
Land:		
	Total land 372 thousand sq.km. 73% mountainous and 27% flat.	144 thousand sq.km. Almost all land is flat except some portions, patticiularly in the districts of Chittagong Hill Tracts, Chittagong and Sylhet.
Agricultural land:		
	Only 14% agricultural land representing 5.4 million hectares.	9.1 milion hectares
Soil Nutrient Status:		
Nitrogen %	.179	.01
Phosphates %	.176	.01
Potash %	.431	1.03
Calcium Oxide %	.465	1.16

Forest Resources:		
Forest land covers 67% of total land area	Forest land covers only 10% of total land	
Imports 64% of domestic timber.	insignficant imports	
Population: (in 1989)		
Total Population: 123.0 million, 7th in world.	109.1 million, 8th in the world	
Population density:		
330 persons / sq. km. population density for flat land only (excluding mountainous land) 1205 persons / sq. km.	766 persons / sq.km.	
Composition of population by age (in percentage):	(1985)	(1981)
(0-14 years)	21.5	48.6
(15 - 64 years)	68.2	47.6
(15-59 years)		
(65 and above years)	10.3	
(60 and above years)		5.6
	Total 100	100
Population Growth (per 1000 population);		
Birth rate	11.4	34.2
Death rate	6.2	12.0
Growth rate	5.2	22.2
or	.59%	2.2%

Sources: 1. Management and Coordination Agency (1987).
2. BBS, Government of Bangladesh (1989).

Natural Resources :

Minerals : In terms of mineral resources both Bangladesh and Japan are very poor. Japan virtually possesses no important mineral resources. Her industry is almost completely dependent on raw materials imported from different countries. In Bangladesh, among mineral resources only natural gas is sufficiently available. The gas reserve is supposed to meet the domestic demand of Bangladesh for about 200 years. But the gas fields are located in the east and south-eastern parts of Bangladesh. Due to the problem of transmitting gas to different districts, particularly to the industrial areas like Khulna and some districts in the northern part, the present level of utilization of available gas is very low.

Oil deposits have also been discovered recently in Bangladesh. But the deposit is very small which meets only 1.5% of the domestic requirement. However, explorations of more oil fields are still going on in Bangladesh in the expectation of good oil deposit.

There is also large deposit of good quality of coal in northern Bangladesh, particularly in Jamalgonj of Jaipurhat district (formerly under Bogra district). But the deposit of coal is at such a depth that in 1974 it was estimated that the cost of mining would be higher than importing coal even from india. However, with increased cost of energy, at present the Bangladesh Government is again thinking of mining the coal deposit. Therefore, in fact, except gas, Bangladesh does not possess any important mineral resources.

Water Resources- With respect to water resources, particularly for irrigation, Bangladesh is in favourable condition than Japan. Due to mountainous topography of Japan, the depth of underground water level is very high. On the other hand, underground water is available in

Bangladesh at a shallow depth in most of the parts of the country. The World Bank experts have estimated that about 80 percent of the total agricultural land of Bangladesh can be irrigated only by exploiting underground water.

Moreover, rivers, canals, tanks, bills, haors, ponds, and ditches occupy about 24 percent of the total area of Bangladesh from where surface water is available. However, the availability of surface water falls short in winter season when there is no rainfall in Bangladesh. On the other hand, in Japan surface water is transmitted to long distances through underground pipes for both irrigation and drinking purposes. The Japanese Government had to construct big dams to utilze surface water. Therefore, Bangladesh is relatively in better position with respect to availability of water resources.

Fisheries Resources- Japan has the natural advantage of having abundant marine fisheries resources in the surrounding seas. Bangladesh also has abundant fisheries resources in the Bay of Bengal which is located in the southern part of the country. Although Bangladesh has abundant marine fisheries resources, the Bangladeshi people prefer sweet water fish to marine fish. Thus domestic demand for marine fish is very low in Bangladesh. In contrast, Japanese people eat lot of marine fish including sea weeds.

So far, the potentiality of inland fisheries resources is concerned Bangladesh is in much favourable position than Japan, since 24 percent of the total area of Bangladesh is under inland water. However, modern technology for inland fish culture in Bangladesh is yet to be developed for higher fish production.

Forest Resources- Japan is very rich in terms of forest resources. Forest land covers 67 percent of the total land area of Japan while only 14 percent of land is under forest

in Bangldesh. In fact, forest land in Bangladesh is less than 10 percent as deforestation in Bangladesh is very rapid in recent years. The interesting fact is that although Japan is rich in forest resources, 64 percent of the domestic demand of timber for building construction and wood pulp is met by imported wood in Japan (as 90% of planted tress are younger than 35 years). Deforestation in Bangladesh is going on at a very high rate although she is very poor with respect to forest resources. It has long-run effect on ecological balance and climate of Bangladesh. Some scholars think that if the process of deforestation goes on at this rate the northern Bangladesh will become desert in future.

Therefore, available resource conditions of Japan and Bangladesh show that except forest resources, Bangladesh is more or less in favourable condition. Despite all these natural favourable conditions Bangladesh suffers from food deficit and majority of the people live below subsistence level.

DIMENSIONS OF POVERTY IN BANGLADESH COMPARED TO JAPAN

Bangladesh is poor compared to Japan. The per capita income of Japan in 1989 was 132 times higher than that of Bangladesh. As a result of low per capita income, more than 80 percent of the population in Bangladesh live below poverty line and about 70 percent of the total population suffer from malnutrition. Per capita food consumption of Japan and Bangladesh clearly shows that the present level of food consumption is very poor in Bangladesh (Table-2).

Not only food, the problems of clothing, housing, medical facilities etc. are very acute in Bangladesh. Only one doctor is available for 5762 persons and one nurse for about 1200 persons in Bangladesh compared to 1 doctor for 740 persons and 1 nurse for 210 persons in Japan.

Table-2: A Few Indicators of Economic Development of Japan and Bangladesh

(i) Per Capita income (GNP) of the two Countries in 1989.

	Amount
Japan	$ 23,730
Bangladesh	$ 180

(ii) Per Capita Food Consumption (per year / person):

Food Items	Japan (1986)	Bangladesh (1988-89)
Rice	74.6 kg.	159.3 kg
Wheat	31.7 kg	20.7 kg
Milk and dairy Products :	67.1 kg	4.2 litre
Meat	25.2 kg	3.1 kg
Fish	36.0 kg	7.1 kg
Egg (in number)	100% self sufficient	12

(iii) Per Capita Energy Consumption (Kilograms of oils equivalent in 1989)

Japan	:	3306
Bangladesh	:	50

(iv) Medical Facilities:

Japan (1986)	Bangladesh (1990)
1 Doctor for 740 persons	1 Doctor for 5762 persons
1 Nurse for 210 persons	1 Nurse for 1164 persons

Sources: 1. Management and Coordination Agency (1987)
2. Govt. of Bangladesh (1991)

Regarding other modern amenities of life, Japanese people lead a very high standard of living which is evident from per capita energy consumption. Compared to Bangladesh, per capita energy consumption in Japan is 66 times higher.

PRESENT STATE OF AGRICULTURAL AND INDUSTRIAL DEVELOPMENT IN BANGLADESH AND JAPAN.

Agricultural Development :

The role of agriculture in Japanese economy has now become insignificant since it contributies only 3 percent to the GDP and engages only 11 percent of the total labour force. The younger generations are switching over to the non-farm sectors leaving the old generation with agricultural profession. In fact, agriculture is now become a hobby for the Japanese farmers and not a profession for their subsistence need. However, the Japan Government is putting a lot of efforts to keep agriculture alive for the sake of long-run economic stability of the country.

On the other hand, agriculture is very important in the context of Bangladesh which contributes about 40 percent to the GDP and provides 75 percent of employment to the total labour force. Although the present state of agricultural development in Japan is quite different from that of Bangladesh, still there are some similarities between these two countries in terms of farm size distribution. The average farm size of Japan is 1.2 hectares while for Bangladesh it is .81 hectare. Again, the majority of the farmers are small both in Japan and Bangladesh. Farm households under one hectare represent 71 percent of total households in Japan. The corresponding figure for Bangladesh is almost same which is 70.4 percent. But there is one major dissimilarity among the households who are engaged in agriculture in Japan and in Bangldesh. The landless rural households who constitute more than 50 percent of the total population of Bangladesh are engaged in agriculture; while landless have no role to play in Japanese agriculture. Creation of employment oportunities for this vast majority of rural people has now become one of the major concerns of the development planners in Bangladesh.

However, in spite of the fact that majority of the farm households belong to small farm size group in both the countries, Japanese agriculture is highly mechanized. Bangladeshi agriculture is characterized by traditional technologies which has been sustaining over centuries. Except some modern irrigation technologies like Deep Tubewell and Shallow Tubewell and power Tillers, almost all farm equipment are traditional. In contrast, Japanese agriculture is highly mechanized. For example, in Gifu Prefecture (like upazila) in Japan, it was found that for only 2800 farmers there were 800 transplanters, 750 combined harvesters and 800 power tillers. Moreover, irrigation facilities were available for all plots of land. But in Bangladesh, only 20 percent of the total cultivated area was irrigated up to 1990. Less than 15 percent of the area under food grain is devoted to HYV and fertilizer use is only 95 kg / hectare which is about 20 percent of fertilizer use in Japan.Since nutrient conditon of soil is poor in Bangladesh, more fertilizer should be applied compared to Japan.Again,although rice is the main crop of Bangladesh which occupies about 80 percent of the total cropped area, rice yield in Bangladesh is among the lowest in the world.Not only rice, productivities of other crops are also very low compared to Japan. For rice it is 2.52 times higher, for wheat it is 1.24 times higher and for potato it is 2.88 times higher in Japan than Bangladesh.

So Bangladesh needs modernization of agriculture. But most of the planners and economists in Bangladesh are against mechanization of agriculture for fear of unemployment created by displacement of labour. They argue to introduce more labour intensive technologies to reduce unemployment. However, agriculture in Bangladesh is already highly labour intensive and there is

very limited scope to make it more labour intensive to solve rural unemployment problem. Further, it is not desirable for Bangladesh tc go with traditional technologies while the whole world is advancing with modern technologies. In spite of the fact that there is shortage of draft power, arguments are given against introduction of mechanized agriculture. Like modern irrigation technologies, power tiller has already been introduced in Bangladesh and this has compensated the shortage of draft power to some extent and make the agricultural sector a bit more dynamic. Efforts should be made to create non-farm employment opportunities because employment in agricultureal sector is already very labour intensive.

In case of Japan, although very few people are engaged in agriculture and cultivating less land than Bangladesh, productivity of agriculture as well as overall production is much higher there. It is evident from self-sufficiency level of agricultural products in Japan. On the other hand, in spite of devoting 80 percent of total cropped land for rice production, until recently Bangladesh had to import on an average about 2 million tons of food grain every year. Bangladesh spent about 30 percrnt of total import expenditure just to import food grains. Besides food grains, there is acute shortage of fish, meat, egg and milk. For example, due to shortage of milk the import of powder milk from abroad has increased by 30 times during one decade. The Government is spending a lot of money for importing powder milk instead of investing adequate money for the development of livestock sector.

Political Economy of Agricultural Development in Bangladesh :

The farmers in Bangladesh are generally poor. Even the farmers who are defined as large / rich farmers, they are

not really so large / rich as it is generally thought of. They may be rich compared to general rural people, but compared to medium type of businessman in the urban areas, they are not that much rich. So they cannot afford to buy agricultural machineries and even they face difficulties in meeting cost of irrigation, fertilizer, insecticides, HYV seeds, etc. The institutinal credit supply is also very limited which meets hardly 20 percent of the total need of the farmers.

The low level of investment in the agricultural sector by the Government of Bangladesh is seriously affecting agricultural growth. Although agricultural sector in Bangladesh contributes about two-fifth to the GDP and provides livelihood to about two third of the population, its share of total public expenditure (both revenue and capital) has only been marginally higher than 10 percent. Resources generated predominantly in the agricultural sector have been increasingly transferred to other sector of the economy grossly neglecting the critical requirements for building up the essential facilities for crop agriculture in particular. Bangladesh is lagging behind self-sufficiency in food, one of the national objectives mainly because of smaller allocation in the agricultural sector.

Since the farmers are very poor in Bangladesh, it is difficult for them to adopt new technologies without government support. Although farmers in Japan are very rich, still the government is providing a lot of supports for agricultureal development in Japan. The Government of Japan is spending huge amount of money for constructing embankments, land development and providing irrigation and drainage facilities to the farmers. The agricultual credit is also supplied with easy terms and conditions so that farmers can buy machineries / equipment for farm

production. The government of Japan has also restricted importing cheap rice from other countries to maintain high price of rice to protect the interest of the farmers. In Bangladesh, instead of supporting the farmers, government is reducing subsidy from fertilizer, insecticides and irrigation equipment and putting heavy pressure to the farmers to repay loan. The poor farmers in some cases are forced to repay loan by selling their bullocks and some valuables.

Table-3: Comparative Statistics of Agricultural Conditon of Japan and Bangladesh

(i) Contribution to GDP from Agriculture:
Japan - 3%
Bangladesh- 40%

(ii) Employment
Employment by Sectors (1980)

	% in Agriculture	% in industry	% in Services
Japan	11	34	55
Bangladesh	75	6	19

(iii) Farm Size :
Japan : 1.2 hectares of cultivated land per farm family
Bangladesh : 0.81 hectares of cultivated land per farm family

(iv) Farm Size Districation:

Japan (in 1980)	Bangladesh (in 1983-84)	
Farm households under one hectare represented 71% of the total farm households	upto 1.1 hectare	70.4%
	1.2 to 3 hectares	24.7%
	Above 3 hectares	4.9%

(v) Landlessness:
Japan : No landless Labourer household
Bangladesh : more than 50% of the rural households are landless.

(vi) Agricultural Productivity (kg/hectare):

	Rice	Wheat	Potato
Japan	5128	3052	27350
Bangladesh	2032	2469	9500

(vii) Fertilizer Use (kg/hectare):
Japan : 391.1 kg
Bangladesh : 92.16 kg.

(viii) Self-Sufficiency Level:
Self-sufficiency level (in percent) of principal agricultural products in Japan (1983):

Rice	-	94%
Wheat	-	11%
Fruits	-	81%
Meat	-	80%
Milk and Dairy Products	-	80%
Sugar	-	30%
Soybeans	-	4%
Egg	-	100%

Source: 1. Management and Coordination Agency, 1987
2. Govt. of Bangladesh, 1989
3. Ministry of Foreign Affairs, Japan.

However, the Government of Bangladedsh has been forced to take such measures by the pressure of U.S Government and World Bank who are the major donors for Bangladesh. But the funny thing is that US Government like Japanese Government give lot of subsidy for inputs or provide price support for output although the farmers are rich. In recent years the U.S Government has guaranteed its producer's price which is almost two to three times higher the world market price of rice. This means that without huge amount of government support, US would never win in the international rice market competition (Kada, 1988). But the US Government and the World Bank is insisting Bangladesh Government to withdraw subsidy from agriculture. It may be mentioned here that almost 100 percent of total development budget of Bangladesh is dependent on foreign aid and loan. In contrast, development budget of India is dependent only for 5 percent and the development budget of Pakistan is dependent only for 15 percent on foreign loans / grants. Therefore, since development budget of Bangladesh is heavily dependent on foreign aid, Bangladesh Government is compelled to accept the conditions of the donor countries even though they are not favourable for agricultural as well as overall development of the country. The situation is not different for other developing countries which are heavily dependent on foreign aid.

Industrial Development :

Industry contributes only about 8 percent to the GDP of Bangladesh. The major industries in Bangladesh are jute, textile, lather, paper, sugar mill and fertilizer industries. At present garments industry is playing an important role in foreign exchange earnings. However, development of industrial sector in Bangladesh as a whole is very limited

On the other hand, evidence of growth, diversificatin and high technical standards of the Japanese machinery industry are seen in almost every corner of the world. Ships made in Japan are sailing in different seas of the world. Japanese cameras, transistor radios, watches, television, tape recorder, VDO, electronic calculators, computers have established a reputation for quality and are in wide demand in the world market. Japanese cars, buses and trucks are helping to meet transportation needs of six continents. Electric generators and other heavy electrical machinery made in Japan are helping supply light and power for home and industries. Japanese spinning and weaving machinery is being used in the textile industries in many countries of Asia and other parts of the world.

Rapid growth of Japan's economy from the late 1950s through the 1960s was powered by vigorous investment by private entrepreneurs in new plant and equipment. Japan's past industrial development has been characterised by a steady drop in the weight of Labour-intensive industries such as textile and sundries against a remarkable growth of capital-intensive industries such as chemicals, steel and machinery. Japanese exports were at one time more heavy industry oriented and much of the total export volume was produced in high resource consuming industries with a low "knowledge-intensive" character. After facing two "oil shocks" Japan is now emphasizing on "**knowledge intensive industries**" due to its limited land and mineral resources (Source: Ministry of Foreign Affairs).

Industrial development in Bangladesh is verfy slow. Up to 1947 Bangladesh was under British colonial rule for about 200 years. During this long period the undivided India was a supplier of industrial raw materials to England and also a good market for British goods and commodities. Even most of the industries set in that

period were inherited by India during partition of the Sub-continent in 1947. Moreover, during British period the people who were very rich were more interested to purchase 'Zamindaris' than to invest money in industries. Because, 'Zamindaris' were regarded as more prestigious in the society than that of ownership of an industry. However, during Pakistan period from 1947 to 1971 Bangladesh was again exploited by West Pakistan (now Pakistan) and little attention was given for industrial development.

Thus, Bangladesh inherited weak industrial base when it was liberated in 1971. The industrial development in Bangladesh is still very slow due to inappropriate government policies and also for experimentation on nationalization and denationalization. Besides these, the existing industries are suffering from labour unrest, uncertainty of raw materials, non-availability of skilled man power, shortage of capital, frequent electricity failure etc. Some industries are facing competition from foreign goods for which there is no import restrictions.

Among different industries, at present garment industries are flourishing very rapidly in Bangladesh due to comparative advantage of cheap labour. But this industry has also started facing problems due to 'quota'/ restriction imposed by USA and European countries on importing Bangladeshi garments.

BALANCE OF TRADE SITUATION OF BANGLADESH AND JAPAN

Balance of trade situation of the two countries is just reverse. Bangladesh has huge amount of trade deficit since imports are much more than exports. In 1987-88 per capita import was Tk. 859 against per capita export of Tk. 386 which resulted in per capita deficit of Tk. 473. Again among the imported items consumer goods alone constituted 36 percent of total import of which food grains topped the list.

On the other hand, Japan now has huge amount of trade surplus which has become one of the major economic problems for Japan. However, Japan is a gaint in both exports and imports. For instance, Japan ranks 3rd in the free world (after USA and West Gernany) as an importer of food stuffs, is by far the world's biggest importer of raw materials such as crude oil and other fuels. On the other hand, Japan is currently the world's biggest exporter of colour T.V sets and other electrical appliances, automobiles, ships, steel and high precision opticial and electric products such as cameras and time pieces.

From early 1970s, Japan was criticized by the US and Western Europe for 'flooding' their markets with exports, and trade friction became a major international issue. Friction is especially evident in Japan-US trade where Japan has consistently recorded surpluses in recent years. The Japanese currency 'Yen' has become stronger than US dollar which has become a major economic problem for exporting Japanese commodities since these have become constlier in the international market.

FACTORS ACCELERATING DEVELOPMENT OF JAPAN AND AFFECTING DEVELOPMENT OF BANGLADESH

Contribution of Education :

One of the main factors behind the present stage of economic development of Japan is long-run effect of education. Highly educated and skilled man power is an asset for Japan which has transformed Japan from a rice based agricultural economy to a leading industrial country in the world. Japanese are now enjoying the full benefit of modern education system which was introduced in 1872 by the Meiji government. However, even in the Tokugawa Era (1600-1868) thousands of schools existed in Japan and the percentage of educated people was more than the

present percentage in Bangladesh. At the end of Tokugawa Era it was said that more than 40 percent of the Japanese could write or read. After compulory education in Japan in 1882, the literacy percentage reached at 90 in 1904, and by now it has reached 100 percent. Compared to this, the percentage of literacy in Bangladesh is only about 20 percent.

Not only this, the level of education is also very high in Japan compared to Bangladesh as can be seen from the following figures:

Table-4: Level of Education of Japan and Bangladesh

Bangladesh	Japan
41% below primary level	100% Primary education (6-12 years)
90% below SSC level (up to 15 yrs.)	100% Middle education (12-15 yrs.)
	94% Higher education (15-18 yrs).

Source: Management and Coordination Agency (1978) GOB (1989)

Number of universities in Japan is about 500 while Bangladesh has only 9 universities. These facts indicate that although Japan is densely populated, her population is an asset while population in Bangladesh is a liability. In spite of very low percentage of highly educated man power, Bangladesh sends highly skilled man power like doctors and engineers abroad for earning foreign currencies. They are not paid well in Bangladesh for which they alaways search for job abroad. On the other hand, Bangladesh government is paying high salaries for foreign technicians, advisors, etc.

The education system in Bangladesh is also defective which was introduced during the British colonial rule to serve their interest. More emphasis has been given on general education rather than technical education which has created large number of educated unemployed man power.

The present education system in Bangladesh can be compared with the education system of Japan which was prevailing during Tokugawa Era. At that time there were mainly 4 categories of education (honku, gogaku, juku and terakoya). During the Tokugawa Era the Samurai class (5% of total population) who firmly controlled the political and military institutions studied at 'honko'. For others there were different types of educational institutions according to their status and occupation. The same situation is prevailing in Bangladesh as can be seen from different types of educational institutions cited below:

Educational System for Different Categories of People in Bangladesh and Its Consequences.

	Particulars	Education for ruling class/elite class	Education for general people	Education for rellgious minded and for poor people
1	Medium of Instruction	Englash	Bengali	Arabic
2	Hierarchy of institutions	Kindergartens ↓ Pre-Cadet School ↓ Cadet College ↓	Primary school/ Kindergartens ↓ High School ↓ College/Univer-sity ↓	Moktab /Mosque ↓ Madrasa ↓ Islamic University(few students from Madrasa) ↓
3	Jobs	Defence, Foreign Service, etc.	Various general fields and also in technical lines	Madrasa teacher / Imam, etc.
4	Unemployment	Nil	Large number of unemployment	Massive unemployment
5	Power and econo-mic strength	Both power and solvency	Less power and less solvency	No. power, no solvency

Note: In some cases transfer of students from English to Bengali medium or vice-versa occurs.

Thus, education system in Bangladesh is creating different classes with conflicting interest. In recent years more emphasis has been given on 'Madrasa' or religious education than on general education which is evident from the growth of school, college and madrasa during the period between 1985-87 as shown below:

Number of Schools, Colleges and Madrasas increased during 1985-87:

Primary School	-	404
High School		334
Madrasa		905
Colleges	-	146

Source: Hossain, M. (1990)

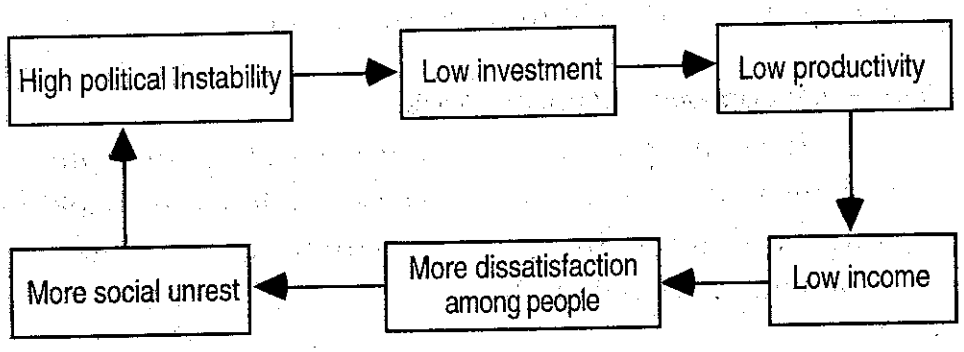
It shows that during the period 1985-87 the increase in the number of 'Madrasas' is higher than total number of Primary Schools, High Schools and Colleges.

Strong Leadership and Political Stability :

Since 1868 Japan has got strong leadership which has helped rapid establishment of new industries, importing western technologies and financing necessary investment. The investments of different companies have been possible due to generous support of the banking sector. The government has also helped in ensuring supply of raw materials from abroad and exploring world market for finished goods.

Highly stable political condition of Japan has played a very important role for its quick development. During long period from 1868 to 1989 (121 years) there were only 3 Emperors in Japan. Again, from 1955 there is only one political party in power (LDP, Liberal Democratic Party). In contrast we have numerous political parties (more than 100) and only in 10 years period from 1971 to 1981 Bangladesh had more than 10 Presidents.

Due to constant political instability the government also can't take any long term plan. With the frequent change of government the national policies are also changed. And in such a situation enterpreneurs are afraid of big investment. Therefore, high political instability in Bangladesh is causing low investment, low productivity, low income, more dissatisfaction among the people and more social unrest leading again to more political instability.



Quick Absorption of Foreign Technologies :

The Japanese demostrated remarkable success to absorb new foreign techniques rapidly and imporve these systematically. In fact, Japanese goods are so convenient and fascinating that it attracts the minds of every body. The price is also reasonable.So Japanese goods capture world market very quickly compared to other countries for the same product.

The Japanese people have the tendency of adopting foreign technologies. On the other hand, Bangladeshi people have high propensity to consume foreign goods. Unrestricted imports of luxury commodities has accelerated this tendency among the Bangladeshi people.

Strong Sense of Natinal Unity :

Japanese people have strong sense of national unity and they prefer to work in a group which has also helped build Japan. Bangladeshi people have also shown instances of strong feelings of nationality, but not for nation building activities. Bangladeshi natinality feeling worked well during language movement in 1952 to establish Bengali as a national language instead of Urdu and again during liberatin war of 1971. However, this feeling of national unity did not work well to build the nation.

Sincerity and Dedication to Work :

Japanese people are very hard working, disciplined and dedicated to their works. These qualities are lacking among Bangladeshi people which are hindering development of Bangladesh.

Unique Labour Management :

Japanese people get life time employment under some companies and every employee thinks it as his own company and works sincerely for the well being and prosperity of the company. The company also provides benefit to the employees out of its profit.

In Bangladesh, the relationship between employer and employees is like master-servent relationship. The employer tries to exploit employees and the employees also try to exploit employer. If the company makes good profit, the employees do not get any additional benefit. But if it fails to run smoothly, the employees have every possiblity of loosing the job. So there is always dissatisfaction among the employees which causes strikes, violence etc.

Readiness to Adjust with Changing Conditions :

Japanese people are dynamic in thinking and can adjust themselves very quickly with the changing conditions. So they can cope with the problems very quickly. For example, after first 'oil shock' in 1973 they tried to reduce oil consumption and switched over to the use of gasoline in cars/vehicles instead of oil. Again, after second 'oil shock' in 1983, they emphasized production of less resource consuming and more knowledge intensive technologies (for example development of diversified use of computers). Further, since Japanese Yen has become stronger against Dollar, Japan is facing problems in exporting her commodities as the products of Japan have become costly in the world market. So, now they are looking for investing in foreign countries so that they can sell their products produced in those countries under Japanese companies at a cheaper price.

This quality of adjusting with dynamic problems is unique of the Japanese people. This has been possible due to highly skilled and motivated labour force which is lacking not only in Bangldesh but also in many developed countries.

Distributive justice :

With high economic growth under capitalistic framework, Japan has surprisingly maintained distributive justice. About 85 percent of Japanese maintain above average standard of living. This is the major difference with other capitalistic countries where income disparity has been widened with economic growth. Even in a country like Bangladesh where mixed economy is prevaliling, the distributive justice has got less importance. Capitalism with distributive justice maintains long run social stability and following this Japan is

progressing at a very rapid speed. Japan is a bright example to the whole world which has shown how a country without having mineral resources and with heavy population pressure on its limited land could be one of the strongest economic powers. It has also shown how a country can be developed under capitalistic framework maintaining distributive justice in the society. So it is not only Bangladesh, the developed countries also have many things to learn from Japan.

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RESPONSE OF TRANSPLANTED AMAN RICE TO NITROGEN FERTILIZATION AFTER GREEN MANURING

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ABSTRACT

An experiment was conducted at Level Barind Tract to find out the effect of green manuring on succeeding Transplanted aman rice (T. aman rice) and to find out the nitrogen requirement of T. aman rice after green manuring. Dhaincha (Sesbania aculeata L.) a green manuring crop, was grown before T. aman rice and it produced a biomass yield of 17 tha which was incorporated into the soil. Subsequently five different treatments viz. '0' kg N/ha, 20 kg N/ha + Green Manure (GM), 40 kg N/ha + GM, 60 kg N/ha + GM and 80 kg N/ha were tested in T. aman rice. Grain yield obtained from 80kg N/ha (4.49 t/ha in 1990 and 4.50 t/ha in 1991) was comparable to those obtained with 60 kg N/ha + GM (4.68 t/ha in 1990 and 4.64 t/ha in 1991) and 40 kg N/ha + GM (4.47 t/ha in 1990 and 4.32 t/ha in 1991). Economically 60 kg N/ha + GM and 40 kg N/ha + GM found more profitable. The result showed that about 25-50% of the recommended nitrogen used in T. aman rice could be saved without significant yield reduction by using green manuring crop before T. aman rice.

INTRODUCTION

The organic matter content of most soils of Bangladesh has gone below the optiumum level for successful crop production. The Level Barind Tract soil is not an exception. The organic matter content of this soil is very low. Under irrigated situation farmers usually cultivate two rice crops in the existing cropping sequence. Mostly, no leguminous crops or green manuring crops are grown by the farmers. Continuous cultivation of transplanted rice under irrigated situation and use of crop residues as fuel

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or cattle-feed enhanced further deterioration of the organic matter content of the soil. Because of the limited number of animals per household, the cowdung obtained from the same is insufficient. Moreover, a considerable portion of cowdung was also used as fuel. Hence, less amount of cowdung is available to the farmer for imporvement of soil health. Therefore, to improve this degraded soil, inclusion of a green manuring crop in the cropping sequence is an urgent business.

Use of green manuring crop to supply symbiotically fixed N and organic matter, when incorporated in the soil is not a new practice in Bangladesh. However, complementary use of green manure with inorganic fertilizers, particularly to increase use efficiency of applied fertilizers and for maintaining currently deteriorating soil fertility has assumed new significance (Abedin and Mukhopadyay, 1990). Research results of many scientists indicated that about 50% of the recommended N levels in rice may be reduced if green manuring is done (BRRI, 1984; Quasem et. al., 1987). Hence, less resource based farmers could be benefitted if green manuring is done. But very little information is available about the nitrogen requirement of rice after green manuring specially in the Level Barind Tract. Therefore, the present piece of work was undertaken to study the effect of green manuring crops on succeeding tranplanted aman rice and to find out the nitrogen requirement of rice after green manuring.

MATERIALS AND METHODS

The experiment was conducted in the farm of Rural Development Academy, Bogra, during Kharif II season,

1990 and 1991. The land was medium high and the soil was clay loam in texture having p H value 5.5 to 6.5. The available NH_4-N, P and K as obtained from initial soil analyses were 27 ppm,18 ppm and 0.23 meq/100 g soil, respectively. The area of the Academy belongs to Level Barind Tract, AEZ region 25 of Bangladesh.

The experiment was laid out in randomised complete block design with three replications. The unit plot size was 10m × 5m. Dhaincha (Sesbania aculeata L.) was used as green manuring crop before Transplanted aman rice.

The green manuring crops was sown on May 15, 1990 and on May 10, 1991 and about 16.8 t/ha and 17.2 t/ha of green biomass were incorporated into the soil on July 14, 1990 and on July 9, 1991, respectively. After that, five different levels of nitrogen were tested in combination with green manure on succeeding Transplanted aman rice. The treatments under investigations were as follows:

i) O kg N.ha (control)
ii) 20 kg N/ha + Green manure (GM)
iii) 40 kg N/ha + GM
iv) 60 kg N/ha + GM
v) 80 kg N/ha only (recommended dose)

Blanket application of $p_2 0_5$, K_2 0 and S were made @ 60, 40 and 20 kg/ha, respectively in all the plots. Entire amount of $P_2 0_5$, K_2 0 and S were applied during final land preparation. Nitrogen was applied in three equal splits at 15, 30 and 50 days after transplanting (DAT). Thirty five days old seedling of 'BR 11' rice variety was transplanted on July, 21 1990 and July 16, 1991, maintaining 25 x 15 cm plant spacing with 3-4 seedlings per hill. The crop was weeded once at 30 DAT. To control rice stem borer

Dimecron 100 EC was applied @ 850 ml/ha on 45 DAT. The crop was harvested on November, 10, 1990 and on November 15, 1991. Data on Yield and yield contributing characters of Transplanted aman rice were recorded.

The collected data were then analysed statistically and mean values were adjusted by Duncan's Multiple Range Test (DMRT) whenever necessary following Gomez and Gomez 1976.

RESULTS AND DISCUSSION

The yield and yield contributing characters of transplanted aman rice (T. aman rice) as affected by different levels of nitrogen after green manuring have been presented in table-1. (Appendix-A). The result showed that in both the years, highest number of effective panicles (242 in 1990 and 242 in 1991) per unit area was recorded from 60 kg N/ha + GM which was identical with 40 kg N/ha + GM (241 in 1990 and 241 in 1991) and 80 kg N/ha (241 in 1990 and 241 in 1991) but significantly differed from 20 kg N/ha+ GM and '0' kg N/ha. The lowest number of effective panicles per unit area was obtained from '0'kg. N/ha. Similarly, the highest number of filled grains (77 in 1990 and 77 in 1991) per panicle was obtained from 60 kg N/ha + GM which was identical with 40 kg. N/ha + GM (74 in 1990 and 74 in 1991) and 80 kg N/ha (76 in 1990 and 76 in 1991) but significantly differed from other treatments. Thousand grain weight was not significantly influenced by the different treatements. However, in both the years, maximum thousand grain weight was obtained from 60 kg N/ha + GM (24.81 g in 1990 and 24.79 g in 1991) and lowest from '0' kg N/ha (24.65 g in 1990 and 24.66 g in 1991).

The above results clearly suggest that within certain limit green manure might act as complementary to nitrogen for effective panicles per unit area and number of filled grains per penicle but thousand grain weight remains unaffected.

In both the years, highest grain yield was obtained from 60 kg N/ha + GM (4.68 t/ha in 1990 and 4.64 t/ha in 1991) which was identical to 40 kg N/ha + GM (4.47 t/ha in 1990 and 4.32 t/ha in 1991) and 80 kg N/ha (4.49 t/ha in 1990 and 4.50 t/ha t/ha in 1991) but significantly differed from 20 kg N/ha+GM and '0' kg N/ha. The highest grain yield from treatment 60 kg N/ha + GM indicating superiority of green manuring plus inorganic fertilizers over '0' kg N/ha or 80 kg N/ha. Data further indicated that green manure when supplimented with 60 kg N/ha and 40 kg N/ha in T aman rice, the yield increase on an average (mean of two years) was found 46 and 37% higher over '0' kg N/ha, respectively. When only chemical fertilizer (80 kg N/ha) was used, the yield increase was found 40% higher over control.

The result further showed that grain yield obtained from 80 kg N/ha was comparable to those obtained from 60 kg N/ha + GM and 40 kg/ha+GM. Therefore, the result indicated that about 25-50% of the fertilizer nitrogen could be saved without significant yield reduction by using green manure. Similar findings also reported by Quasem et al., 1987 and BRRI, 1984. Straw yield follwed the similar trend of results as in grain yield and highest straw yield was obtained from 60 kg N/ha+GM.

Among different treatments, highest gross return (Tk. 30365/ha) was obtained from 60 kg N/ha + GM (Table-2 Appendix-A). The net return (Tk.22123/ha) and benefit-cost ratio (3.68) were also found highest with the same treatment. The gross return obtained (Tk. 28635/ha) from 40 kg N/ha + GM was slightly lower than 80 kg N/ha (Tk. 29320/ha) but the benefit-cost ratio (3.56) was higher might be due to lower in total variable cost. Hence, 60 kg N/ha+GM and 40 kg N/ha + GM found economically more profitable.

CONCLUSION

From the above study, it appeared that grain yield obtained from 80 kg N/ha was comparable to those obtained from 60 kg N/ha+GM and 40 N/ha+GM. Again, 60 kg N/ha + GM and 40 Kg N/ha + GM found economically more profitable. These suggest that about 25-50% of the fertilizer nitrogen could be saved without significant yield reduction and economic loss by using green manure before T. aman rice.

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Appendix-A

Table-1: Yield and yield parameters of rice as affected by different levels of treatments after green manuring.

Treatment	Number of effective panicles/m2		Number of filled grains/ panicle		100-grain weight (g)		Grain yield (t/ha)		Straw yield (t/ha)	
	1990	1991	1990	1991	1990	1991	1990	1991	1990	1991
'0' kg N/ha (control)	235b	234b	59c	58c	24.65	24.66	3.28c	3.11c	3.34c	3.25c
20 kg N/ha+GM	236b	235b	67b	66b	24.74	24.73	3.81b	3.69b	3.92b	3.85b
40 kg N/ha+GM	241a	241a	74a	74a	24.77	24.76	4.47a	4.32a	4.62a	4.44a
60 kg N/ha+GM	242a	242a	77a	77a	24.81	24.79	4.68a	4.64a	4.84a	4.78a
80 kg N/ha (recommended dose)	241a	241a	76a	76a	24.79	24.78	4.49a	4.50a	4.75a	4.65a

In a column, means followed by the same letter(s) do not differ significantly at 5% level of significance.

In a column, means without lettering do not differ significantly upto 5% level of significance.

Table-2: Relative profitability of different levels of nitrogen on transplanted aman rice after green manuring (Mean of 1990 and 1991

Treatments	Gross return (Tk./ha)	Total variable costs (Tk./ha)*	Net return (Tk./ha)	Benefit-cost ratio
'0' kg N/ha (control)	20817	6841	13976	3.04
20 kg N/ha +GM	24442	7808	16634	3.13
40 kg N/ha +GM	28635	8024	20610	3.56
60 kg N/ha +GM	30365	8242	22123	3.68
80 kg N/ha + (recommended dose)	29320	8459	20861	3.46

* Including cost of green manuring where applicable.

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TREE PLANTATION THROUGH SOCIAL FORESTRY: BANGLADESH CASE

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ABSTRACT

The concept "Social Forestry" came into being in mid 1970s. Afterwards, the concept gained importance in the international arena and got prominence as a strategy for rural development. The main focus of this paper is tree plantation through social forestry in the context of Bangladesh. Like some other countries of the Asia Pacific region, Bangladesh faces acute deforestation and degradation of forest lands. Deforestation is the transformation of the forest land to non-forest usage and degradation of forest is the reduction of the quality of the forest. Available data shows big depletion of forest resources of the country. Various reasonS are associated with deforestation in the country. These are : (1) collection of fuelwood and fodder; (2) high population density; (3) shifting cultivation and encroachment; (4) inappropriate land use etc. In the context of high depletion rate of forest in Bangladesh, social forestry programme will launch fight against the forest destruction of the country. Social forestry is tree plantation though the active participation of the beneficiaries in the design, implementation of the reforestation activities and sharing of the fruits of these activities. In Bangladesh, various tree plantation programmes are implemented by the government and non-government agencies. Programmes implemented by the Department of Forest of Bangladesh government are: (1) forestry extension project; (2) community forestry project; (3) Thana plantation and nursery project. Besides these programmes, various NGOs like Bangladesh Rural Advancement Committee (BRAC), Comilla Proshika, Proshika Manobik Unnayan Kendra, Rangpur Dinajpur Rural Services (RDRS) are also implementing various tree plantation programmes in different places of the country. The Betagi-Pomora and Vannara Projects are two examples of social/agroforestry programmes with active participation of beneficiaries. Provision of land tenure system; strengthening of research and training capabilities in the field of social forestry; arrangement of subsidies on seedlings, and development of monitoring and evaluation system are some of the important policy suggestins to improve the social forestry activities situation of the coutnry.

INTRODUCTION

In the early 1970s International Donor Agencies changed their funding emphasis towards poverty alleviation. Partly in connection with this change, in the forestry sector the concentration of protection and management of only government owned forest was

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questioned. Moreover, in the developing countries the practice of classical forestry started losing importance because of its rich-bias character. Classical forestry by nature is devoted to the raising and management of long term forestry crops on a massive scale to produce big timber for commercial and industrial purposes which serve the interest of the rich. Benefits of the classical forestry do not reach to the hands of the common people of the rural community. Therefore, this type of forestry activities does not get support of the rural masses (CIRDAP, 1990, p.6).

Due to the energy crisis of 1973 developing countries were bound to reassess their energy situation and to look for alternative sources of energy for the consumption of the country. It was realized that dependence of the developing countries on fuelwood for heating and cooking would continue for decades (FAO, 1987, p. 137). Studies showed that the deforestration and destructin of the vegetative cover in recent decades to feed growing populations could have devastating social, environmental and economic consequences (FAO, 1987, p. 137).

In these circumstances, during the mid 1970s a new approach to forestry was suggested. Thus "Social Forestry" concept came into being (FAO, 1987, p. 138). The theme of the World Forestry Congress in Jakarta in 1978 was "forestry for people" (FAO. 1987, p. 138). In the same year World Bank Published its forestry sector policy paper. This recommended a shift in forestry landing. At least 60 percent of forestry landing was to be directed toward environmental protection and aforestation programmes to supply the basic needs of local population for fodder, fuelwood, and other forest products (FAO, 1987, p.37). In response to this international awareness in the Asia-

Pacific Countries Social Forestry is gaining importance as a strategy for rural development. The Government of Bangladesh in the Third Five Year Plan (1985-90) and the Fourth Five Year Plan (1990-95) emphasized on the development of social forestry all over the country. In India most of the states initiated social forestry programmes in the early 1980s through various centrally planned schemes like the Rural Fuelwood Programme, the National Rural Employment Programme and through most recently, the Prime Ministr's aforestation programme, e.g. National waste land Development Board (Blair, 1986.p. 1317). During the Sixth Plan period (1980-85) these schemes altogether have brought an estimated 3.86 million hectares worth of planting (Blair 1986, p.1317). In 1978 the Government of Nepal introduced the rules for Panchayet Forests and Panchayat Protected Forests to establish forests managed by local communities, religious institutions and individuals (Reoetal, edited, p. 88). In Indonesia, intensified systems of agro forestry have been practised income generating activities like bee-keeping,raising of fodder grams, medicinal plants. In the Philippines the major social forestry projects undertake are: forest occupancy management project, communal tree farming project, the family approach to reforestation projects (Rao, 1984, p.10).

Different Development Agencies at the national and International level are implementing social forestry projects. Based on the desire and felt need of the Centre on Integrated Rural Development for Asia and the Pacific (CIRDAP) Member Countries (CMCs), CIRDAP initiated and action programme on social forestry in IRD in 1987. The main focus of the project was on the disadvantaged groups of the village communities, namely, women, landless labourers and the unemployed youth. The project

was funded by Japan. Three participating countries of the project are: Bangladesh (Rural Development Academy, Bogra); Lao PDR (Department of Forestry and Environment, Ministry of Agriculture and Forestry), and the Philippines (The then National Council on Integrated Area Development and presently Economic and Development Authority). As a follow up of the project, CIRDAP conducted a Mid-term Workshop during 14-17 January 1991, in collaboration with Rural Development Academy (RDA), Bogra, Bangladesh. After due deliberations, this mid-term workshop came up with number of useful recommendations, (for further details regarding recommendations, see, CIRDAP Action Research Series No. 9, Social Forestry in IRD, CIRDAP, Dhaka, 1991). When the project was on the verge of completion, CIRDAP arranged a final Regional Expert Consultation on Social Forestry in IRD on 12-15 February 1991, Vientiane, Lao PDR. The Consultation was attened by the representatives of Bangladesh, Lao PDR, Philippines, Sri-Lanka, CIRDAP staff and Representatives of various relevant agencies of Lao PDR. After due deliberations, the consultation came up with serval recommendations.

The theme of this paper is tree plantation through social forestry. Although sometimes examples are given about social forestry experiences of some other Asian Countries, the main focus of the paper is on Bangladesh situation in the field of social forestry. The first section of the paper is devoted to the deforestation and degradation situation of the country, second section of the paper concentrates on some of the definitional aspects of social forestry which is a solution against deforestation. The third section of the paper discusses the tree plantation programmes under social forestry undertaken by

Government and Non-government Agencies of Bangladesh. Here also the author discusses two case studies of social / agroforestry undertaken for the interest of the poor section of the community. The final section of the paper deals with some policy implications in the field of social forestry in the country. This paper is based on the secondary sources. Only the Vannara case has been written on the basis of Author's field visit and discussion with the members of the Vannara Agroforestry Group.

SECTION 1: DEFORESTATION - A SERIOUS PROBLEM

Deforestation and degradation of forest are severe threat to the environment of the countries of Asia-Pacific region. Deforestation is the transformation of forest land to non-forest usage. Degradation is the reduction of the extent and quality of the forest cover. According to FAO estimation in the Asia-Pacific region during 1981-85 about 1.826 million ha. of forest area was deforested per year. If this trend is projected into the future, by the year 2000 some 36 million ha. of closest forest areas would have been converted to non-forestry uses. This represents a decrease in the closest forest area of th region from 306 million ha. in 1980 to 270 million ha. in 2000, a reduction of 12% of the closest forests. Thus average annual rate of deforestation of closest forests in the region is 0.6% (FAO/RAPA, 1989, p.6).

Most studies show fuelwood consumption as a major cause of forest degradation and destruction which contribute more than 80 percent of the total removal of forests in tropical Asia. Most of the rural population in South Asia and well over half in South-east Asia use wood and charcoal as their main, if not only, cooking fuel (FAO / UNEP, 1981, Quoted in APO, 1990, p.65). Lower-income

urban residents throughout tropical Asia rely on charcoal, lighter and easier to transport the long distaances from villages where it is produced. This creates even greater demand for wood, nearly half the energy lost when wood is converted to charcoal in traditional ways (Sandra and Lori, 1988, p.18. Quoted in APO, 1990, p.65). Situation in South Asia in respect of fuel is very critical. For most of the poor people alternative fuels like Kerosens, gas or electricity are either unavailable or very costly. Most of the fuelwood in these countries come from the forest. Wood scarcity forces many people to use crop residues and dung for fuel instead of fertilizer. Soil fertility decreases and crop Yields decline, the households sink even deeper in poverty (FAO UNEP, pp.13); Abedin et al, 1989; Reobert Repetto, 1989, 6; Quoted in APO pp.65). As remaining forests become more distant from the households, more time is needed to collect fuelwood. This reduces the productivity of these predominatly subsistence households and reduces the food available.(Mellor, 1988. Quoted in APO 1990, pp. 65). Where fuel supplies are inadequate, families are forced to cook fewer meals or cannot cook food sufficiently (Abedin, 1988, Quoted in APO, 1990, pp.65). As Mellor writes, "the combined effect is a downward spiral of incomes and health, as malnourished individuals are less and less able to overcome the problems caused by deforestation" (Mellor, 1988, pp.11 Quoted in APO, 1990, pp.65).

The expansion of agriculture is one of the main causes of destruction forest in the countries of Asia-Pacific region. Thailand has most rapid decline of forest area. Forest area of Thailand declined from more than 40 percent of the country's total area in 1975 to 29 percent of the country's total area in 1985 (APO, 1990,p.16). Over the same period, the agricultural area grow by nearly .5

percent a year, from 35 percent of the country's total area in 1975 to 40 percent in 1985 (APO, 1990,p.66). In the Philippines the combination of illegal logging and subsequent spread of settled agriculture are the main causes of drastic deforestation. During 1950s and 1960s encroachment in agricultural lands occured in India. In recent years there is also a vast reduction of forest area in India due to the encroachment for agricultural purposes. In Indonesia, much of the voluntary spread of agriculture (in constrast to the government organized resettlement programme) has been from Java to Sumatra and less so to Southern Borneo (ESCAP, 1986,pp.21-23. Qutoed in APO, 1990, pp. 67).

Livestock plays an importent role in the economy of the Asian countries. Many poor people of Asia depend on the income of the livestock rearing. Milk production and marketing is an important source of income for the landless and marginal farmers. In South Asia farmers depend on tree fodder and forest grazing to feed their livestock for at least part of the year. In India due to continuous pressure on grazing lands, the existing community lands can partly meet the fooder needs. The milk yield is low in these countries due to lack of supply of adequate and good quality fodder. In Nepal women spend hours for getting fodder for livestock. In South East Asia in parts of Philippines and Java trees are an important source of fodder. Thus limited supply of fodder compared to the high demand, contribute to forest destruction.

For housing purposes trees are used. Due to the lack of adequate income the poor people of the rural community can not buy timber in the market. This inability to buy and felt necessity may also contribute to the destruction of

forests by the people. Many rural households use the forests for medicine, gums, resins and for various minor forest products. Woody handicrafts may bring cash income for rural households of the region. Due to the necessity of trees for these above mentioned purposes may contribute to destruction of forest to acquire these essential goods.

BANGLADESH SITUATION

Before going to discussion regarding deforestation rate, few words may be told about the status of forest sector of Bangladesh. The forest sector contributes three percent to the GDP and about two percent of the total labour force is employed in the sector (Draft FFYP). Quoted in GOB / IUCN pp.65).

The total area of forest land in Bangladesh is 2.45 million ha. It covers 17 percent of the total land of the country. Out of this 2.18 million ha. is government owned and the remaining 0.27 million ha. is privately controlled homestead forest (Draft Fourth Five Year Plan quoted in GOB/IUNC). Depending on their location, nature and type of management the state owned forest can be divided into three categories: (1) Mangrove forests (2) Hill forest (3) Plain land forests. Mangrove forests also known as Sunderbans are productive forests located in the South-Western districts of Khulna, Bagerhat and Satkhira, Mangrove forests are the largest source of timber and fuelwood of the country. The hill forests are available in the hills of north and north eastern districts of Bangladesh like Sylhet, Moulvibazar, Hab igonj, Chittagong, Cox's bazar, Banderban, Rangamati and Kbagracherri. The plain land forests are located in the greater districts of Dhaka, Tangail, Mymensingh, Rangpur and Dinajpur.

The private sector village woodlots are mostly trees grown on homestead land. According to the estimation of the Third Five Year Plan document the total area of homestead forest was in 1985 271,000 hectares. Although homestead forest represents only about 10 percent of the total forest land constitute about 30 percent of all porductive forestry. More importantly, they provide a dispropartionately large share of wood products for domestic consumption relative to state forest lands (Ministry of Agriculture, Dhaka, 1987). A study in 1980-81 (Douglas 1982) estimated that homestead forest provided about 85 percent of all wood consumed, including nearly 90 percent of all fuelwood and 80 percent of all timber. In addition, about 90 percent of bamboo which is an important commodity came from homesteads.

Like many other countries of Asia - Pacific, Bangladesh also faces acute deforestation. Available data shows big depletion in forest resources in all the major forests. The growing stock in the Sundarbans has depleted from 717 m.cft. (20.3 m M3) in 1960 (Forestall,1960) to 456.66 m. cft. (13.2m M3) in 1984 (Chaffey et. al, 1985) (GOB/IUCN, 1991, p. 83).

In the reserved forests of Chittagong Hill Tracts the growing stock has depleted from 840m cft (23.8mM3) in 1964 to less than 700 m cft. (19.8m M3) in 1985 (De Milde et al, 1985) (GOB/IUCN,1991 pp.83). Even the highly productive village forests which account for 82% of the total wood and bamboo supply were exploited to more than their sustainable yield (FAO, 1986, Dalmacio, 1989 Quoted the FAO/RAPA, 1991, pp.13). In the sal forest areas in the central and northern region of the country, only 15% of 100,000 hectare gazetted State forests was

actually under forest (FAO, 1986, Quoted in FAO/RAPA, 1991, pp.13), the rest was degraded and encroached (FAO/RAPA, 1991 pp. 13). Severe erosion has taken place in the degraded lands and natural growth of forest has become impossible in most of such lands. Over exploitation of cultivated lands has contributed to the decline in soil fertility throughout the country (FAO/RAPA, 1991, pp.13-14.).

There are various reasons of depletion of forest in Bangladesh. Collection of fuelwood and fodder is always associated with destruction of forest in Bangladesh.Besides these, some other reasons are discussed below:

(1) **High Population Density:** There are various causes of depletion of forests in Bangladesh; High population density (735 per km2) as a result of which cultivated and forest lands are not in a position to fulfill basic needs of the population. Although food is the main component of basic need, with the increment of population, demand for other basic necessities like fuelwood, timber increases. Supply being limited, gap between demand and supply is increasing continuously. According to an estimation there will be a net deficit of 5.96m M3 of logs by the year 2000 assuming no change in the present demand-supply trend (Roy, 1987. Quoted in GOB/IUNC, 1991 p. 91). According to a FAO/UNDP study, on supply and demand of forest products and future development strategies', if trees continue to be depleted at current rates, annual per capita fuelwood availability in rural areas will decline to 0.02 M3, from current per capita fuelwood consumption estimated at 0.08 M3 (USAID, 1985) (GOB/IUNC p. 91).

(2) **Shifting cultivation:** Demand for forest land for shifting cultivaton is very acute. In Kassalong and Rankhiang reservs, the shifting cultivation has encompassed in 1985, an area of approximately 65,000 or 27 percent of the total area of both the reserves combined as against as 2100 ha. in 1963 (DC Milde et al, 1985. Quoted in GOB/IUNC, p. 87).

(3) **Encroachment:** As a result of high population growth there is an illegal encroachment of the forest land. Upto 1989, 76,596 ha. of forest lands have been encroached upon in different forest areas of the country (GOB/IUNC, p.91).

(4) **Inappropriate Land Use:** During the period from 1960-89, 54,668 ha. of forest lands have already been transfered to other organisations for non-forest purposes (GBO/IUNC, p.93).

SECTION II: SOCIAL FORESTRY - AN ATTEMPT TOWARDS SOLUTION

In the context of high depletion rate of forest in Bangladesh, Social Forestry Programmes will launch fight against forest restriction in the country. The basic premise of social forestry (SF) is that what man destroyed, through SF activities man will reconstruct. Through social forestry people will meet their demands of fuel, timber, fodder and other household needs. Social forestry may also be used to conserve their soil, to enhance the productivity of land, to increase their income with new marketable goods by planting trees. It is expected that people will not exploit the forests by producing their own tree products through social forestry.

Social forestry may also play vital role for the rural community in various ways; through supply of timber, fruits etc. Social forestry can also act as an important source of income, also as an instrument for increase of food grain production. Moreover employment implication of social forestry for the rural poor is also very important.

WHAT IS SOCIAL FORESTRY

The term social forestry is used to devote a wide variety of tree growing and harvesting practices. The novel essence of social forestry activities lies in the word "social" - that is, the projects serve local needs through the active involvement of the beneficiaries in the design and implementation of the reforestation effects and sharing of forest produce (FAO, 1987, p. 139). Various terms inter changeably used for social forestry are: (1) Community forestry (2) Farm forestry (3) Homestead forestry, (4) Village forestry (5) Participatory forestry (6) Rural forestry etc. Main objective of social forestry is the

upliftment of the socio-economic condition of the disadvantaged section of the rural community. The ultimate objective of social forestry is "not physical but human" (Magno, 1986, p.1). According to Mr. K.F.S. King, formerly FAO Assistant Director General and Head of the Forestry Department, "The physical goals which will be set are really means towards achieving the objectives of enhancing the basis of human beings" (Magno, 1986, p. 1-2). Social forestry activities are done to fulfill the basic needs of the rural people for fuel, fodder food, small timber etc. In the process of fulfillment of above objectives, social forestry activities bring some additional objectives: (a) maximisation of land productivity (b) enhancement of ecological stability. The thirst of social forestry differs from conventional (or commercial) forestry sectors in the following respects: (1) it covers the production and use of forest products in a sector of the economy that is mainly non-monetized, (2) it involves the direct participation of beneficiaries and (3) it implies different attitudes and skills on the part of fosters who have to shed their role as protectors of forests against the people and work with people for growing trees. Some of the important characteristics of social forestry are:

1. **People's Participation :** In the field of social forestry, people's participation is a necessary element. Successful impleementation of social forestry programmes without effective participation of the rural people is not possible. People's direct involvement in the programme is necessary right from the project formulation stage where decisions are taken regarding selection of sites and maintenance, distribution of benefits and marketing

of forest products (Sen and Das, 1987. Quoted in Prasad, 1990,p. 328).

The participation in social forestry activities can be on an individual, household level or collectively as a community level. Another criteria of participation may depend on the mode of ownership of land utilized for the purpose. The land utilized for the purpose may be government owned or private land. Government land may be land which is already under forest or other public land. Private lands used for forestry are lands under homestead and farm land. These lands may also be used for other purposes. The most common practice is that community based forestry is on public land, private forestry is on private land like homestead and farm areas.

2. **Small Scale :** The second characteristics of social forestry is small scale in nature. As the project on social forestry is taken by an individual, or a household, or community it is small by necessity dictated by the financial constraint.
3. **Disadvantaged People :** Social forstry activities are mainly for the disadvantaged section of the rural society. They cannot invest on trees for a long time. They try to minimize the time to get fruits of investment with maximum yield per unit. For example, small timber, poles for housing, small tree stems for fuelwood, leaves for fodder and organic fertilizer, flowers, and fruits.
4. **Monocropping and Integrated Cropping :** While conventional forestry deals with mono culture tree cropping for single purpose use (Say lumber), tree plantation under social forestry may range from mono cropping with multiple-use purpose (e.g, forest plantation with fruit growing species for fuelwood,

poles and fodder), one end , to integrated cropping system for multiple uses (e.g, trees integrated with food crops for wood, food, fodder and green mangrove production) in the other.

AGROFORESTRY

Agroforestry is a kind of social forestry practices in order to increase the productivity of land.In Asia practice of cultivation of agricultural crops in combination with trees and other woody vegetation is not new. It is being practised for a long time. What is now termed as 'agro forestry', is integrated cultivation of woody perennial crops and animals as the same unit of land, in some form of spatial mixture and temporal sequence (Gujral, 1991, p. 195). This is the way of land use for the integrated purpose of agriculture and forestry in order to maximise production of goods and services for the society. In the words of king "it therefore seems necessary to attempt to devise a perfect system of land management which eschews the false dichotomy of agriculture and forestry, which conserves the eco-system and which at one and the same time provides food and wood. - Such a system is agro - forestry. First well organized agro forestry practice was done in Myanmar in nineteenth century. There at that time Teak plantertias were established through system of 'Taungya'. In Burmese language 'Taungya' means hill cultivation. The main purpose of the taungya system was to establish forest plantation. Agricultural crops were cultivated only temporarily.

Only during the last decade, with the advent of international recognition about the potential for use and development of agroforestry, increased attention is given in official development efforts to the further promotion of agroforestry in the Asia Pacific region (Wiersum, 1991,

pp. 202). Generally the rationale for development of agroforestry may be three fold (Lundgren, 1982. Quoted in Wiersum, 1991 p.203):

- increasing diversified production, especially in condition of land shortage. This increased production is not only seen as a means to improve the availability of desired agricultural and tree products, but also as a means to relieve land use presure on valuable conservation areas.
- contribution to sustained production of crops and livestock either under condition of fragile lands, or in area of lagging economic development and prevalence of low external input in agriculture.
- contribution to land rehabilitation and increased production on degraded lands.

In principle social forestry activities are scheduled to fulfill multifarious needs of the society viz. provision of fuel, fodder, food, small timber, protection of agricultural crops against wind and water erosion, environmental conservation, and some other purposes. Thus agroforestry technology can be treated as one of the process for social forestry development. But on the same time, it is imporant to make clear analytical differentiation between agroforestry and social forestry (Wiersum, 1991, p. 205). Agroforestry is a descriptive term for a group of landuse systems or practices incorporating both trees and crops and/or animals, while social forestry refers to a group of forest management systems, characterized by participation of local people and adding at fulfillment of local needs for forest products and services (Wiersum, 1991, p. 205).

SECTION III: TREE PLANTATION PROGRAMMES UNDER SOCIAL FORESTRY IN BANGLADESH

Forestry Extension Project:

Social forestry activities in Bangladesh was initiated in 1980 with the Forestry Extension Project under the Forest Department with the domestic fund. After initiation of Community Forestry Project (CFP) which will be discussed later social forestry extension project merged with CFP. During the period 1980 and 1987 the project performed the following activities (Task force, 1987, pp. 35-36):

- Production of 49 million seedlings
- afforestation in more than 3100 villages
- roadside tree planting along about 1600 kilometers of primary highways and roads and almost 600 kilometers of union council roads.

Presently there are 97 forest extension nurseries throughout the country. Total annual production from these nurseries are between 7-8 million seedlings of forest, fruit, multipurpose and ornamental species (Task force, 1987 pp.36,).

Community Forestry Projcet (CFP):

In the context of energy shortage and acute scarcity of wood, fuelwood, fodder and bamboo, forest department launched the Community Forestry Project (CFP) with the financial assistance of Asian Development Bank in 1981. UNDP gave technical assistance and training components for the project. FAO also extended its cooperation for this project. Project covers 23 districts in western and North Western Bangladesh. The objectives of the project as laid down in the project proforma are (Ali, 1990. pp.8.):

(1) intensificatin of government efforts towards increasing production of fuelwood,fodder and small timbers primarily for local communities.
(2) motivation and training of individuals, farmers, village elites, religious leaders, women folks, union council leaders and other organizations.
(3) provide employment opportunities, skills and infrastructures for coordinated accelerated development of rural areas.

During the period of initiation of the project some targets were set. As the activities of the first phase of the project were completed in June 1987, the achievement of the project during the period 1981-87 can be compared with the target. As it is seen from the table below, despite many problems to involve social forestry activities, the achievements are quite satisfactory:

Table-1

Targets and Achievements of CFP-1 (1981-87)
(In bracket percentage)

Sl. No.	Components	Target	Achievements
1.	Homestead plantation (no of Villages)	4650	4060 (87)
2.	Strip plantatn (km)	4800	4280 (89)
3.	Fuelwood plantation (ha)	4800	4892 (102)
4.	Agro-Forestry (ha)	120	124 (103)

Upazila Banayan and Nursery Prokalpo (Upazila Plantation and Nursery Project):

As a follow-up of the community Forestry Project, a second phase, a nation wide social forestry programme entitled upazila plantation and nursery project had been undertaken with the assistance of ADB and UNDP. The project would cover 435 upazilas in 61 administrative

districts of Bangladesh. The project period is upto 1993-94. The total cost of the project is estimated 1569.13 million Taka including an Asian Development Bank loan of 1363.3 million Taka and UNDP technical assistance of 53.1 million Taka (Ali, 1990 p.12). The activities under the project are as follows (Ali, 1990 p.12).

- Establishment of 40,000 acres of Block-wood plantation of high yielding tree species and 8,000 acres of agro-forestry plantation;
- Establishment of 2,000 acres of plantation on land outside Water Development Board Embankments;
- 11,038 miles of strip plantation along highways, railway and embankments;
- Establishment of 345 upazila Nurseries;
- All suitable rural areas like homestead land, compounds of community buildings, marginal, fallow and water land should be brought under the coverage;
- Distribution of 69.4 million seedlings during the project period;
- Arrangement of training and conscientization of 75,223 personnel e.g. village leaders, block supervisors, upazila plantation assistants and malies and forest officers.

Ministry of Environment and Forest, Government of Bangladesh is the sponsoring agency of the project and executing agency is the Forest Department and Upazila Parishads. The project would be monitored and supervised also by the Department of Forest. The existing forest nurseries would be used as training centres.Nurseries would also be used for production of seedlings for distribution to the public. The upazila parishads would be responsible for establishment of strip

plantations along the roads and highways, Railways, Embankments with peoples' participation. Upazila parishads would also be responsible for plantations on community land like compounds of educational institutions, offices, and other suitable vacant places.

Role of NGOs in Social Forestry

Bangladesh Rural Advancement Committee (BRAC)

The BRAC is an indigenous non-governmental organization which has been engaged in various rural development activities. Social forestry is an important area of rural development activities of the organization. BRAC assumes improvement in the rural living standard via increased availability of tree products both for home consumption and commercial sale, and by increasing access and control of physical, intellectual and political resources by the landless (BARC, 1989). The objectives of the social forestry programme of BRAC is to control rapid forest resource depletion and to open income earning opportunities for the rural poor.

Social Forestry Programmes

(1) **Homestead Plantation Programme:** This programme was initiated by BRAC in 1977 under which seedlings of different species are supplied to group members to plant in their homesteads.

(2) **Roadside Plantation Programme:** This programme was launched in 1980. Under this programme the beneficiaries are supplied seedlings of different species of fruit trees and fuelwood trees from the forest department and other government nurseries to plant trees along roadsides, school playgrounds, ponds and other public places at the upazila, union and village levels. For this purpose lands are leased from respective local administrative authorities on a renewable basis.

(3) **BRAC Nurseries:** Nursery establishment programme of BRAC was launched in 1988 with involvement of trained group members in growing seedlings. Training on nursery development is provided at a Training and Resource Centre (TARC) where both in house trainees and govt. resource persons participate. Nursery raiser is provided loan, who in turn sells the seedlings at a fixed pricce to BRAC. later BRAC distributes the seedlings to group members for both homestead and roadside plantation programmes. In 1989 BRAC had 57 nurseries in its 18 area offices. These nurseries produced about 302,543 seedlings of various species. Mulberry plants constitute one - third of the total production. The overall raising cost is around Tk. 0.80 per seedling. Besides the above mentioned 57 nurseries, there are 28 nurseries run by the group members. These nurseries were initiated before BRAC's nursery establishment programme.

(4) **Sericulture Programme:** This programme as an avenue of income and employment generation specially for women was started in 1977 as an experiment under the Manikganj Integrated Development Project (IDP). Under this programme mulberry-leaves are used to raise cocoons for silk production. This programme contains whole production cycle from raising cocoons to final process which includes spinning of yarn, wearing, tailoring and embroidery. This Programme has been extended from only Manikganj to 54 TDP areas of BRAC. Under this programme worms are made available to group members to rear them to maturity, provides training, supply Mulberry plants, provide credit and technical advice on rearing of worms and purchasing of cocoons.

(5) Ipil-Ipil Plantation in the Livestock Rearing Programme :

Under this programme of BRAC Ipil-Ipil trees are grown.These are grown as fodder for BRAC group members involved in livestock and poultry programmes.

Trees are planted in the roadsides where leases of 20 to 99 years have been obtained from local parishads. Bamboo gabions are used for protection of trees. Moreover a group member who is rearing livestock will be liable for protection of around 30 trees and accrued benefits from the fodder produced. Seedlings of Ipil-Ipil are supplied by neighboring upazila livestock office free of cost.

(6) Homestead Agroforestry Programme :

This project of BRAC is located in Manikganj area. Under this programme on 400 homesteads landless women and men cultivate a mix of trees and vegetables. BRAC gave training to 25 women horticultural workers who in turn provided training to the homesteaders and distributed seedlings such as coconut, betelnut, lemon, gauva and papaya for one taka per seedling.

Comilla Proshika

Comilla proshika is a Bangladeshi NGO devoted to the socio-econimic development of landless labourers, marginal and small farmers. Social forestry is an important component of the organizations' develop-mental activities. Comilla proshika established 17 nurseries in its Area Development Centres (ADC) during second half of 1985 with the help of its staff and members of village organizations formed by Comilla proshika. It may be mentioned that Comilla proshika also

assisted the members of village organizations to establish nurseries in their homesteads. As a result one nursery for at least 3 villages was raised for selling seedlings / saplings to the interested villagers in the field of social forestry. In the early 1986 about 95 homestead nursery operators were assisted by the Comilla proshika. During the period from october, 1987 to March, 1988 an additional 24 male members of village organizations and 2 staff members were trained in nursery.

These nurseries have supplied nearly 0.5 million saplings to the members of village organizations. A mix of fruit, fuel and timber saplings are produced by these nurseries. It is the experience of proshika that buyers prefer fruit bearing trees compared to other varieties for their homestead forests. The sale price of each sapling varies from Tk. 1.00 to Tk. 2.00 for all varieties except coconut sapling which is sold for Tk. 12 each.

Besides the homestead forestry, Comilla Proshika has implemented roadside plantation programme through agreement with the authorities of Local Government bodies at Proshika's Brahmanbaria and Comilla Regions. Timber and firewood saplings are planted in the roadside. The major programme in this direction was plantation of 5 kilometer road connecting Bangladesh Rural Development Academy (BARD) from Comilla Sader. This road has been planted mostly with mahogany and shegun.

Recently Comilla proshika has taken lease of 250 acres of khas land from Brahmanbaria district authority for afforestation. The main activities under the project will be : (1) Recruitment, training and development of 500 youth and student volunteers;

(2) tree plantation/replantation; (3) protection of trees through employment of local people on part time basis; (4) excavation of water bodies in the forest; (5) wild life introduction/protection; (6) fish rearing in water bodies.

Proshika Manobik Unnayan Kendra

Proshika Manobik Unnayan Kendra (MUK) has been engaged in the rural development activities since 1976. The beneficiaries of proshika-MUK's programmes are mainly landless agricultural labourers, poor and small marginal farmers and occupational rural workers. A sizable proportion of target beneficiaries of the organization are women. Social forestry is an important area of development activities of proshika - MUK. The following are some of the social forestry programmes of proshika - MUK.

(1) **Social Forestry Along Roadsides in Serajgonj Area Development Centre (ADC):** This programme was initiated by proshika - MUK in 1985 in cooperation with forest department, upazila officials. 17 organized groups consisting of 340 people participated in the programme. 14 miles of upazila roads were taken on lease from upazila parishad for five year period. Then fast growing fuelwood/fodder tree, babla (Acacia nilotica), and short term high return crop, arher (cajanus cajun) were planted in the roadside. Training on nursery and plantation technique was provided by the forest Department, Proshika - MUK provided seeds and other inputs such as technical assistance in harvesting and marketing of products as well as mediation in cases of conflict with adjoining land owners.

It has been shown from the experiences of social forestry programme in serajgonj ADC that these types of programmes are profitable for the landless people.

(2) **Khas land forestry:** Proshika - MUK have identified some acres of land in Sreepur Upazila. Some groups are planting mulberry trees and short term crops e.g. turmeric and ginger with credit from the organization.

(3) **Homestead Forestry :** In this area proshika - MUK provides inputs such as seeds, saplings, training to encourage female group members to grow trees and nutritionally useful vegetables around the homesteads. Some members are also setting up nurseries to provide seedlings for roadside planting homestead land.

Rangpur Dinajpur Rural Services (RDRS)

The RDRS is a foreign NGO with the financial support of Lutheran World Federations Department of World Service. In Bangladesh RDRS started its operation since 1972. RDRS is involved in various rural and agricultural development activitis e.g. agriculture extension, community motivation, women's development, infrastructure building, health care and rural technology. All activities of the crganization are centred in Rangpur and Dinajpur districts.

RDRS began its afforestation activities in 1977. The activities are roadside, embankment and household tree plantation. Both men and women from landless groups are involved in the afforestation activities. Destitute women are appointed as caretakers of the planted trees.

RDRS initiated roadside tree plantation programme as an experimental basis with plantation of 57.60 kilometers of roads and 60,000 trees (CIRDAP, 1990, pp.41). RDRS implements its activities through tripartite agreement with the district council, Roads and High ways Department and the forest department for a period of three to four years. RDRS roadside polantation activities have been undertaken in the districts of Rangpur, Kurigram, Thakurgaon, Gaibanda, Nilfamari, Lalmonirhat, Panchagor. 851 kilometers of road and embankment have

been covered with 595,700 trees. Tree plantation activities have also been undertaken in and around premised of 471 schools/colleges with 30000 trees (CIRDAP, 1990 pp.41). In cooperation with upazila Nirbahi officer (UNO) and the local upazila administration nurseries are raised near to the roadsides, adjacent to the school or community centre Acacia, Mangium, Nilotica and others are the species used in the plantation process. RDRS also encouraged people through training and motivation to develop nurseries as income generating project. During 1988-89, in 150 active nursery farmers produced a total of 596, 852 saplings and grafts and they earned taka 892, 972 (CIRDAP, 1990, pp.41).

From the initiation of social forestry projects RDRS used bamboo cages for prtection of tree from livestock and forest offenders. Each cage costs taka 28. In 1988 RDRS initiated nursery tree plantston programme along 16 kilometers of road without protective cages. Tree plantation without cages make people aware of their responsibility in preserving the trees.

SOME CASE STUDIES *

There are some experiments of Social Forestry in Bangladesh which have been undertaken solely for the interest of the marginal and landless farmers. Such two examples are dicussed below:

A. THE BETAGI-POMORA EXPERIMENT

In 1976 a mode of Social Forestry* with the participation of marginal and landless farmers to enhance their income and employment opportunities were conceived through series of informal exhanges of Professor Alim, Dr. Yunus and late Mahbub Alam Chasi. Professor Alim is the main architect of the experiment.

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* This case study section of the paper has been taken from, M.A. Momin, Social Forestry for the Rural Poor, A Resource paper presented in the Regional Expert Consultation on Social Forestry in IRD, 12-15 February, 1991, Vientiane, Lao PDR.

The project was initiated in Betagi and pomora. There are two Mouzas in the Rangunia Upazila of Chittagong district. In two Mouzas landless families were settled. The Betagi settlement in a hilly Khas land (unused and fallow land owned by the government). Pomora is an unclassed forest land. The Betagi project was made operational in 1979. It was initiated with settlement of 72 landless families. The number of families was increased to 82 in 1989. The pomora project was initiated in 1980 with settlement of 96 landless families which increased to 122 families in 1986. The landless families are from the adjoining mouzas of Tinchowdia, Gungunia-Betagi and Dingorlonga.

The Betagi and Pomora lands were theoretically under Government control. But in Paractice these were being used by the local elites illegally. Land for the project was achieved from the Government in the face of stiff opposition from the local elites. The Deputy commissioner and local adminis-trative officials helped to achieve the land. With their assistance each family was allotted 1.6 hectares of land on a lease basis. Other important factors which helped to face the threats and challenges of local elites are: Professor Alim's good linkages with local intermediary and central level decision makers of the revenue and forest bureaucracy; Solidarity of the landless group; and settlerrs were the kin groups from the adjoining villages. In Betagi and Pomora loans were given to the landless farmers by the local Krishi Bank for agroforestry cultivation. In Betagi per family was given loan for taka 2000-5000. According to the Grameen Bank rules the families were divided into 14 groups. Members of each group were jointly responsible for loan repayment (Task Force, 1987, pp.44). In the project area

an agroforestry system was developed with integrating of vegetable crops, fruit trees and forest species. (Task Force, 1987, pp. 44). Crops of short rotation e.g. vegetables, medium term crops like papaya, banana, pine apple, lemon and others and long term tree crops e.g. jack fruit, mango, coconut, timber and fuel etc. were cultivated in the project areas.

A survey revealed that upto May, 1986, an average of 551 fruit trees (including banana), 62 forest trees and 2 bamboo groves were planted on each family plot of 1.6 hectares. Also 163 forest trees had regenerated naturally. An average area of about one - quarter hectare of land of each family was under vegetable production (Ahmed, 1988). The average income per family per annum varies from Tk. 12,000 - 20,000 in Pomora to Tk. 25,000-40,000 in Betagi. None of the members in the Betagi settlement has an outstanding loan to the bank and nobody intends to take credit any more from the bank (Sen and Das, 1988).

Thus it is seen from the settlement scheme of Betagi - Pomora that it has brought some degree of stability and security to the landless families. The model developed in Betagi and Pomora showed a bright example of positive impact of bringing fallow and unused Khas and forest lands and landless farmers together through an integrated land use and farming system for the growing of trees and agricultural crops. For the success of the scheme the several organizational aspects like: (i) formulation of small homogeneous groups and their federation at the whole settlement level (ii) adoption of an apropriate decision making process for selection, demarcation and distribution of plots (iii) suitable arrangements for procurement of inputs like seedlings, credit and fertilizer, (iv) development of leadership for the groups (v) organization of weekly meeting and training (vi) necessary collaboration and coordination with government

agencies and non-government organisation (NGOs). The project has also shown bright prospect of income generation of the landless farmers through sale of fruits, vegetables, cash crops, and secured future through plantation of long term trees of timber and fuel.

Thus social forestry experiment in Betagi and Pomora showed us the lesson that if the genuine landless farmers are properly organized around falow and denuded hilly lands with adequate disciplined principles this unused or marginally used khas lands may bring tremendous results to the disadvantaged section of the community through agricultural crops, fruit trees and timber trees. It is not only socio-economic development of the rural poor through their rehabilitation but also contribution to the preservation of forests.

B. VANNARA AGROFORESTRY PORJECT

Vannara is located in Kaliakoir upazila of Gazipur district. It is about 45 kilometers from Dhaka city towards Tangail,. Vannara is about 2 kilometers away from Mouchak which is located at the Dhaka-Tangail road. In Vannara an agroforestry project with involvement of landles farmers have been started in 1989-90 with the initiative of 'Bana Bhavan' which is the Central Forest Department of the Government of Bangladesh. The Vannara Agro-Forestry Project is in an area of 187 acres of land. The project was made operational with the rehabilitation of 63 landless families. About 25/20 years back this area was under deep forest. But gradually, this area was deforested. Some landless families from various districts of Bangladesh started to live here. Along with these families, the Forest Department rehabilitated some more families. The total number of landless farmers constituted 63. The Forest Department gave 3 acres area of land to each of these families. Out of these 3 acres, 0.5 acre for homestead and another 2.5 acre for growing crops and trees as a source of income opportunities for these landless families.

Each farmer of the 63 families have been given 2.5 acres of land for cultivation of crops and trees. Trees planted are Eucalyptus, Akashmoni, Koroi, Arjun etc. plants of these trees have been given by the local Forest Office at Vannara. The activities are supervised by the Forest Office consisting of a Forester, two Forest Guards and a Gardener. The plants are supplied by the Forest Office free of cost to the landless families. The plants are raised at the nurseries of the Forest Department. The landless families participate in digging of pits, collection of seedlings, planting, watering, fertilizering mulching etc. Agreement has been made between these landless families and the Forest Department that these trees are planted for 8 years. That means trees will be cut only after 8 years. Benefit from tree plantation will be accrued only after 8 years. Considering these the participant members are paid wages at the market rate. It has also been agreed that after 8 years the farmers will get 50% of benefit, while the remaining 50% will go to the fund of the Forest Department.

Protectin and Maintenance: Post planting cares of trees are the joint responsibility of the foresters and the participant farmers. Main care which is necessary is to protect the plants from the cattle. As these participants are the main inhabitants of the plantation area, there was a general consciousness about not to allow their cattle to graze inside the plantation. Sometimes the rich farmers try to destroy the plants with their cattle. But the participants and the foresters jointly obstruct the nighbouring rich farmers to destroy plants. Sometimes, the foresters file suits against the rich farmers, if their cattle try to destroy plants.

Crop Cultivation: Along with tree, crop cultivation is one important aspect of vannara project. The participants of the project cultivate crops in their 2.5 acre area of land. They cultivate several rows of trees and in between they

cultivate various crops e.g. paddy, peanuts, sesame, black gram, pegeon pea cotton, cucumber, bitter gourd. The farmers can cultivate agricultural crops only in the rainy season. Due to the lack of adequate irrigation facilities they cannot cultivate crops during the other seasons. For this reason, the landless farmers of vannara project area try to involve in non-farm activities like rickshaw pulling, work as labourers in the different small scale industries around the vannara area.

The farmers in consultation with the local Forest Department decide as to which crops will be cultivated. The cost of inputs are borne by the Forest Department for the 1st year. But the output will go to the pockets of the farmers. From the second year, the farmers have to bear the costs of inputs. The farmers use the products mainly for consumption. After fulfilment of consumption demand, they sell the rest in the local markets.

The lands given to the farmers belonged mainly to the Forest Department. But on agreement, lands are leased to the farmers for use. They can use lands for production purpose. But they cannot sell or purchase land. It may be a good proposition not to give land permanently to the farmers. If ownership is vested permanently to a landless family, the whole purpose of social forestry may be foiled. Therefore, a better alternative may be to accord the right of ownership on lease-basis to individual farmers. If some farmers do not work properly, land may be given to some other landless families who will work on agroforestry activities properly.

Each of these 63 landless families have also developed homestead forestry system in their homestead areas. The trees planted are Guava, Papya, Licey, Mango, Pine apple, Jackfruit, Coconut, Koroi, Arjun, Bamboo etc. The result of these tree plantations belonged to the farmers themselves.

Organizational Aspects: Centred round the rehabilitation for 63 landless familes in khas lands and development of agro-forestry project, a society have been formed with these 63 landless families. As all the members of the group are landless coming from various parts of Bangladesh, it is a small homogeneous group. Every week this group meets together to discuss their various problems. Vannara project officials also attend the meeting. The presence of the forest officials in the meeting is justified on the ground that it may be difficult on the part of the landless farmers to find way of maximum use of land resources for the purpose of social forestry which have goals to increase productivity, raise income, enhance social status and to maintain a congenial ecological balance. Therefore, these landless families should be assisted from forestry experts and extension workers. An excellent understanding and friendly relations was found to exist among the landless group and the forestry officials at vannara. This formation of group of disadvantaged farmers also help them to safeguard their interest sometimes threatened by the rich farmers.

Problems / Constraints: The landless farmers started being rehabilitated for three years. But the forestry and agriculture project for these landless farmers have been started only during 1989-90. Therefore, the trees are still young. The tree plantation has been done for eight years period. The farmers have already harvested agricultural crops. They have consumed a portion. A portion have been sold in the market. It is too early to analyze any impact of the project. But such kind of initiation of social forestry activities for the interest of the rural poor of the community is really appreciable.

The farmers have harvested some agricultural crops. As the farmers are asset-less, most of them are under debt. They have not their own cattle. As a result, for cultivation of land they have to hire bullock on payment for ploughing

land. Thus the return which the farmers get from production, a big portion has to be spent to repay loan from rich villagers. They do not have also credit facilities. Moreover, due to lack of adequate irrigation facilities, they are in a position to grow crops only in the rainy season. Thus the seasonal agricultural production is not solving their economic crisis.

It has been observed from the dicsussion with the forestry officials that the villagers are not given any formal training on various aspects of social forestry. Coordination of the project with the government and non-government organization of the project is not upto the mark yet. It was also known from the interview of the landless families that lack of irrigation facilities is a real problem for proper agricultural development of the project area.

SECTION - IV: POLICY IMPLICATIONS

Considering the importance of tree plantation through Social Forestry, various policy measures are necessary to undedrtake, some of the important suggested policy measures are given below:

1. For successful implementation of social forestry programmes in general, and for the poor farmers in particular land tenure is an important aspect. When the landless, marginal farmers are not sure about ownership of land, they will not be confident about the benefits of tree plantation. In that case their participation in afforestation will not be spontaneous (Momin, 1991,pp.30). In case of homestead this problem does not arise, but in case of Khas land, fragmentation of holding and tenurial arrangements such as leasing, mortgaging can create problem for tree plantation. In case of Khas land the problem is acute, because in most cases this is occupied by the local elite. Therefore, land distribution, land lease, tenancy security are essential for social foresty activities (Momin, 1991,pp.31).

Another factor contributed to the insecurity of tenure is the occupation of khas lands by the local elites in Bangladesh. This has been observed in Betagi - Pomora. In many cases local elites are the de-facto owners of land. It is very difficult to force them out from these lands. In all these cases the poor farmers need some help in mediation, conflict resolution or legal action to defend their rights to participate in forests activities (Momin, 1991,pp.31)

2. A. policy declaratin is essential regarding the following matters (CIRDAP, 1991 pp. 85).

More empirical research studies should be conducted regarding the following issues relating to the social forestry:

(a) Land security system
(b) Inter-relationship with Administrative mechanism
(c) Forest products-making facilities
(d) Cost benefit analysis fo social forestry for the rural poor
(e) Agro-forestry activities like tree crop combinations that can help to sustain annual cropping in forest lands.
(f) Multi-purpose tree breeding and improvement to provide farmers easy access to improve planting materials.
(g) Appropriate management techniques for increasing the productivity of agro-forestry activities.
(h) Empowerment of poor and disadvantaged groups through social forestry.

B. National research capacities should be strengthened for approrpriate research infrastructure and by supporting national institutions and the training of local research scientists.

C. Communication and collaboration should be enhanced between institutes and researchers through networks and relevant workshops.

D. Further Action Research and Training Programmes in Social Forestry involving grassroots-beneficiaries can be taken up.

3. Subsidies on seedlings, fertiliser, insecticides, adequate credit facilities are important policy issues.

4. Ease of marketing and good prices are vital for growers of tree and tree products. For that various marketing infrastructural development is essential. Marketing information is also improtant. In West Bengal it was found that in the wake of eucalyptus becoming a profitable business, the middlemen's efforts in the trading became very evident. When it was discovered that in some cases almost half the retail price in nearby markets for the first trees sold in the West Bengal Group farm forestry programme had been retained by intermediaries, the Forest Department responded with an effort to improve market information to strengthen the bargaining position of sellers. (Chambers, 1989 pp. 338).

5. Development of adequate monitoring and evaluation system to monitor and evaluate the social forestry activities in the country is an important policy matter.

6. In the Asian countries including Bangladesh women play vital role in the forestry sector. Women and children are the primary collectors of fuel and fodder for home consumption and for sale in the markets. Women also comprise a large share of the labour force in forestry related activities - nurseries, plantation, logging and food processing. Women are often the main collectors and users of these products - plan fibres, medicinal plants, fruits and

nuts. Therefore, policy measures are necessary to protect the interest of the women in soical forestry and enhance their role in SF (Momin and Raghavan, 1991, pp.6).

7. NGOs are playing an important role in various aspects of rural development, agriculture, health, non-farm activities, adult education, etc. In recent years, there has been a surge of NGO-activities in the fields of environment and forestry. The NGO activities are mainly in promoting awareness; organizing groups; encouraging participation of women and children in community forestry efforts. NGOs also help in distributing fruits and fuelwood as well as tree species for homestead planting and encourage farmers to set up their nurseries to sell sapling. In several countries of Asia, vital contributions of the NGOs have been to convince people that environment and development are inseparable for human progress and that development priorities need not necessarily conflict with environmental consideratin (Momin and Raghavan, 1991, p.5). Policy measures are necessary to safeguard the role of NGOs in SF.

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DEVELOPING A PUBLIC ADMINISTRATION MODEL FOR BANGLADESH

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ABSTRACT

The prime objective of any management or administrative system is effectiveness and efficiency. The experience of the administrative system of Bangladesh is not a hopeful one. The age old administrative system is for from peoples perticipation and democratic values and norms. The administrative model now established in Bangladesh failed to fulfil the needs and aspirations of the people. So, for a better administrative system we all look for a rational, people oriented model. In this article the need to search for developing such a model is stressed. A brief discussion was also offered regarding the administrative models from the Classic Bureaucratic Model to New Public Administration Movement. In the next phase an anatomy of economy, politics and administration was laid down. In light of this anatomy, there was a proposal of administrative model for Bangladesh consisting of four basic values. These are, a) Pluralism, b) Broader access to service, c) Productivity d) Responsibility and responsiveness. A combination of these values can be the variables of a pure public administration model in a country like Bangladesh.

INTRODUCTION

The search for a good and just society is as old as society itself. Hummurabi's Code of Law or any such reference only reminds us of the antiquity of such endeavour. Plato's Ideal State, Moore's "Utopian Society", or for that matter Marx's "Classless Society" are all addressed to the problem of developing a better place for mankind to live.

Scholars of modern times are, however, unable to offer such simplistic solution. Over specialization, methodological confusion, and above all ideological commitment to particular philosophical and political school of thought inhibit the contemporary scholars to

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accept prescriptive solutions in the study of social sciences. This is beyond true for young discipline like public administration. On the other hand, it is the activists day to day problem field where urgent practical problems must be resolved and on the other hand, academicians favourite arena for hypothesizing. One can, therefore, pursue the question of model building in public administration for pure theoretical pleasure or construct models with prescriptive over tones.

This article follows the latter approach with particular reference to Bangladesh public Administration. After considering some of the existing major public administration models, an attempt has been made to develop a preescriptive model keeping some prior assumptions in mind. However, a more exhaustive exploration is beyond the scope of this paper. Mostly secondary literature survey is the basis of this paper.

PUBLIC ADMINISTRATION MODELS

Models, as they exist in the study of social sciences are defined as "a structure of symbols and operating rules which is supposed to match a set of relevant points in existing structure or process." Definitions from Waldo or Fred Riggs are also helpful. Where Waldo sees it as simply the conscious attempt to develop and define concepts useful in classifying data describing reality and or hypothesizing about it". Riggs' view point on model is particularly the same. According to him, a model is " any structure of symbols and operating rules which I think has a counterpart in the real world".

The questions of model building in the social science are designed to aid the understanding of human behaviour. They help the process of discovering which

questions an empirical enquiry should ask; they aid the researcher in collecting and ordering data and in postulating relationships among variables; they serve a pedalogical purpose by conceptualizing a set of complex interrelationships among the variables under study, and they have indirect, if not direct policy implications.

There exists a host of models in public administration which defy easy classificatin. One way to simplify the problem is to borrow Frederickson classificatory schems and refer them to as the classic bureaucratic model, the institutional model, the neobureaucratic model, the human relations model, and the public choice model.

Naturally a model may generate a host of theories, but one theory may be so powerful as to become in effect a general model. In the following discussion, we use model to refer to a rather general image of the main outline of some major phenomenon, including certain leading ideas about the nature and units involved and the pattern of their involvement.

The theorist Frederickson had sometime put together in one or the other category identify themselves to some other category or refuse to be categorized at all. He also recognizes that "some theorists are really hybirds".

The classic bureaucratic model, one of the oldest and most dominating model in the literature of public administration has substantial influence on the thinking of public administrationists of every age.

The classic bureaucratic model has two basic components: the first is the structure or design of an organization; the second is the means by which people work are managed within the organizational design. The bureaucratic model of Weber is among the most

prominent theory of public Administration. Weber described an administrative state in which the bureaucracy was essentially a servant of the state, consequently the bureaucracy's goals are externally determined.

The value of those who developed the classic model are as valid and compelling as were fifty years ago. To carry out a public function as fully possible for the money available (a rather strict definition of efficiency) is.. fundamental to any model in public administration. To carry out public function for the least possible money (a rather strict definition of economy) is equally basic. That an organization should provide quality of service that matches its public's expressed needs-- is likewise a basic value in public administration.

The problem inherent in the classic bureaucratic model is not with the values that it is intendent to achive. Rather, it is with the manner in which the model assumes that efficiency, economy and productivity can be achieved. Hierarchy, managerial control, authority, and centralization are not lined to the achievement of those values as logically as the early bureacratic theorists believed. Indeed, as the non-bureaucratic theorists have demonstrated, effectiveness, economy, and efficiency are the products of relaxed controls, loosened hierarchies and the breaking down of authoritarian leadership styles.

The neo-bureaucratic model is a product of the behavioral era in social sciences. The value to be achieved are generally similar to those in the classic bureaucratic models; hence the designation neo-bureaucratic.

The bureaucratic model emphasizes structure, control and the principles of administration. The unit of analysis is usually the group, the agency, the department, or the

whole government. The values to be achieved are effectiveness, efficiency or economy.

In the neo-bureaucratic model, the decision is the common unit of analysis, and the process of decision making is the central focus. The pattern of reasoning is rational, that is, decisions are based on the desire to achieve as much of a given goal as possible. Modern management science, systems analysis, and operations research are built on the early writings of Simon and James March Cyrt.

These theorists enriched their work with a deep understanding of the formal and informal pattern of the organizational control, the limits of rationality, and the like. The modern neo-bureaucratic school has stayed with the original means-end logic that derives from logical positivism. The close similarities between the means and analysis of the neo-bureaucratic model and the policy administration dichotomy of the bureaucratic model are obvious. The objectives of operations research, systms analysis, policy analysis, and management science are essentially the same as the objectives of bureaucratic theorists. Their work, however, is very sophisticated and has helped practitioners to become more efficient, economic and productive.

The institutional model was developed in the 1940s, '50s and '60s. This model is a manifestation of the behavioral thought, particularly in sociology and political science. The institutional theorists are less concerned with how to design efficient effective or productive organizations than how to analyze and understand existing bureaucracies. These scholars are generally positivists in their perspective. They search for order in complex

organizations or for pattern of bureaucratic behaviour. Public administration scholars designated as institutional are interested in finding out how complex organizations can have.

The human relations model is in many ways a reaction to the classic bureaucratic and the neo-bureaucratic models. Values of this model include worker and client participation in decision making, a reduction in status differentiations and inter-personal competition, and emphasis on openness, honesty, self-actualization and general worker satisfaction.

The modern version of political economics is customarily referred to as the public choice model. It is also known as the non-market economics. It brings non-market economics to public organizations and reopens the issue of centralization versus decentralization.

The youngest model added to the field of public administration however, is the new public administration; which according to Frederickson, bring values of different previous models.

THE EQUATION OF BANGLADESH PUBLIC ADMINISTRATION

Economy: Bangladesh is one of the poorest countries in the world. Her frustrating poverty, low per capita income, high inflation and rapid populaton growth are making it increasingly difficult to hope for anything better. There is no light at the end of the tunnel. The country is one of the most dependent on foreign assistance. In the period 1980-81, 35 percent of development budget money came from domestic sources. In 1989-90 it was almost zero.

Bangladesh's poverty derives not from technical obstacles but from socio-political causes. The inequality between rich and poor is a fundamental cause of economic inefficiency, leading to under utilization of resources, and distorting the economy towards meeting the needs of the rich, while ignoring the production of basic goods for the majority. While the rich live at a very high standard, the poor live in abject poverty.

For the poor farmer, landless peassnt there is no government protection from market forces. The poor are bound to loose whether they enter the market as producers or consumers. The absence of effective government control of the economy puts the poor at the mercy of market fluctuations.

Foreign assistance is also going through the drain. As for example, aid to Bangladesh's industry consists entirely of imported western machinery. A minimal number of jobs were created, at an exceptionally high cost, sometimes in excess of $ 20,000 per job. Scarce government resources were tied up in a handful of these large scale, foreign aided projects: five huge projects, large even by world standards, absorbed two-thirds of the government's investment in public sector industry (1976-80). Yet once completed, the new factories turned out to be major liabilities to Bangladesh. Many of them could not produce to their full capacity, because they were simply too big for the domestic market. And they depended on further infusion of foreign aid, to supply the spare parts and expertise to keep them running.

The Ershad regime created a vast network of bureaucracy throughout the country in the form of Upazila system which put pressure on the already weak

Bangladesh economy. This type of non-productive investment weakened the productive potential of Bangladesh. The investible capital got reduced and no future productive investment could be done. The industry, trade and business sector were controlled by the newly emerged industrailist-cum-trading class coming from different professional groups. They employed their sons, daughters and relatives at the cost of the efficiency and productivity of these sectors. They were rent seekers and were neither interested nor capable to utilize the foreign-aid funded development projects.

The military-bureacratic regime undr Ershad considered this sort of investment innovation satisfactory and there was little or no protest from the people who are being affected. For, they could hardly comprehend the full extent of their misery. After the fall of the Ershad regime, the newly elected BNP government has been following the same economic model though very cauciously.

Politics: As to plitics, nothing praiseworthy could be added. Factionalism, opportunism and moral degradation are marked of our political parties and personalities alike. Politicians, it seems, have come to an understanding with the military for mutual benefit. The alienation from the people has made them appathetic to the interests of the people. Their only concern is their own interest. And in this effort to achieve this end they are unwillingly perputating the military regime. The politics of alliance and realiance produced a political system where an interest consensus took place among the contending social and economic groups who control the state and politics.

Administration: Civil administration in Bangladesh had to accomodate military officials. The politicalization of the armed forces is complete in Bangladesh. The bureaucracy

could only but cooperate with the military in the hope of being picked up as junior partners and thereby strengthen the already strong bureaucratic authoritarian regime. One very witty observer has correctly pointed out that such authoritarianism would not be in contradiction to society's inherent psychological make up because: authoritarianism is preserved in society's paternalistic structure of family and its treatment of women by men, of employees by bosses, of children by parents, of students by teachers, of clients by paternalistic authority codes and practices in a wide variety of institutions. It would have been an happy ending for Bangladesh society if classic authoritarianism could find its way. The revolution of rising expectation which has frustrated people's high hopes also demystified the power of authority.

1990: The economic improvement of the Ershad regime has run the economy and created frustration among all sections of the people. The contending social and economic group became annoyed too. The economic stake, was small to share. At the same time the regime tremendously failed to establish social and legal acceptability that made the regime vulnerable on rational and morale grounds.

The inefficient aid administration created of a non-industrial class who spent most of their accumulated money that they earned out of their involvement in the aid funded development project. The donors model seems to have lost its economic credibility - so they were not happy with the regime. The above reasons and the political movement launched by the major political parties necessitated Ershad's downfall in 1990.

The supremacy of the military seems over. But they are happy. The pay structure of the armed forces gives enough

proof of that. The administrative reform measures and political patronage distribution have done nothing to enhance the morale of the civil bureaucracy. They take part in petty corruption and thereby degrade themselves more in the public eye. They are no longer motivated by high ethical standards. It is futile to hope that any amount of training could bring any significant result. After the establishment of a democratic government in February, 1991 nothing fundamentally changed in the economic erana. Some institutional changes have been initiated. Parliamentary Committees have been trying to dispose their Constitutional roles to ensure some degree of accountability. But lack of experience, institutional weakness and the power of the overdeveloped bureaucracy have complicated the process and hope for a smooth functioning of these institutions is bleak.

The question whether the political and bureaucratic institution will be able to work as vehicles of development is yet in question. Previous experiments suggest that they can only but accelerate the pace of what is known as ' development of under-development'.

PREFACE TO A MODEL

What we have touched upon could very well be elaborated into several volumes. It could have been presented in a more objective, dispassionate and 'scientific' manner. But we are only fuilty of what Albert Camus would call a 'Crime of passion'. For Camus there are crimes of passion and crimes of logic. The boundary between them is not clearly defined. But the penal code makes the convenient distinction of premediatation. And we had no such premeditation of painting such a black picture of our society.

One Thing is sure: The familiar models of public administration do not fit into our situation. It is hard to imagine how models developed in the west could be transplanted into Bangladesh which is ruled by armed forces or is often under autocratic civilian regimes. Therefore, we have to make assumptions. Assumptions that our model is addressed to future government - which is yet to come. It is addressed to a policy which can uphold democratic values and which will be for the people, by the people and of the people.

THE MODEL

The proposed model has four basic values. These have corresponding structural requirements in order to be materialized.

I. PLURALISM

The first value of our poroposed public adminis-ttration model is the practice of pluralism. By pulralism we mean that social power should not be monopolished by one or two interest groups, be it military or commercial. This call for an environment of tolerance; for other people's views and opinion. In oder to attain this objective changes in the resource distribvution system is indispensable. It is only when the wide gap between various social groups could be minimized that we can hope for an environment of tolerance. The role of media in this regard is also very crucial.

II. BROADER ACCESS TO SERVICE

Another basic value to be achieved under the proposed model is broader access to service. In a class based society it is quite natural that the common man will find it very hard to get to the public benefit and services.In order to

guarantee his access to the services, formation of citizen committees might prove helpful. These will be manned by professional and non-professional people from outside the bureaucracy. This will reduce the possibility of widespread corruption, redtapism. To attain these objectives elaborate progra-mmes may be chalked out which should include such important items as land distribution and relief administration.

III. **PRODUCTIVITY**

Productivity as a basic value is quite essential for our proposed model. By prjoductivity we want to emphasize upon the maximum utiliztion of human and natural resources for public good. It needs quantification of admnistrative responsibility. Also the question of incentives are important in this connection. The bureaucracy must be given non-material incentives along with adequate material incentives. Talukder Maniruzzaman argues that "there are, however, non-material but possibly powerful incentives which the leaders of developing countries can profitably use for motivating civil servants . It is professional pride and a sense of inner responsibility rather than high salary which have created a strong 'espirit de corpse' and high standard of public service in the British bureaucracy.In Communist Countries like -China, ideological fervor plays the similar role to professional ethos in Britain. In some states for example, Singapore and Israel, intense nationalistic feelings have inspired civil servants to excell. Unless its leaderas can harness the bureaucracy with some of these non-material incentives, Bangladesh can hardly hope to win the battle against her massive poverty - and underdevelopment.

IV. RESPONSIBILITY AND RESPONSIVENESS

Public administration systme in Bangladesh is hardly reponsible to the public and slow to response to public demands. The bureaucratic process often breeds seeds for corruption in absence of responsibility and responsiveness.

In order to overcome this situation certain measures are necessary to take up. Among them, the enforcement of the rule of law, Creating an Office of Ombudsman are important. To bring about changes in the attitude of the public servants intensive human relations training is also required.

CONCLUSION

"A spider conducts operation that resemble those of a weaver and puts shame to many an architect in the construction of her cells. But what distinguishes the worst architect from the best of the bees is that an architect raises his structures in imagination before he erects it in reality. At the end of every labour process we get a result that already existed in the imagination of the labourer at its commen-cement." For an architect of social reconstruction the task is much more difficult. His imagination is bound to run wild and too sketchy to put it into paper. The complexity of the effort and the extent of abstractness often produce models which lack logical foundation or become too fantastic to materialise. Pure public administration models are bound to become so.

Prescriptions are difficult to prepare. Our prescription of the proposed model of public administration is no better than the level of our understanding and industry to invent one. If that makes it any less applicable, we see no real harm. For, others can also become as frustrated as we are by reading it and venture to erect a better one. That is to our mind, the real purpose of building a model in any discipline.

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POST-HARVEST OPERATION IN RICE: LABOUR UTILIZATION AND DISTRIBUTION IN BANGLADESH

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ABSTRACT

The Bangladeshi farmers utilizes family members capable of working and hired labourers on daily basis or short or long term contract and pay them in cash or kind depending upon the agreed mode of payment. Harvesting, filed stacking, field transport and threshing are done mainly by men (95%) involving about 64% hired labouers; and cleaning / winnowing, drying, parboiling and traditional 'Dheki' milling by women (67 to 73%) where 61 to 75% family labourer used in harvesting to threshing with the rest in harvesting to field transport operations. Labourers used in cleaning through milling operations are lower by 40 to 49 man-hr/t in 'Aman' season than 'Boro' and 'Aus' seasons respectively.

INTRODUCTION

Bangladesh is predominantly an agricultural country. The contribution of agriculture to the national economy is about 55%. More than 85% of the population live in the villages and agriculture is the major occupation of the people characterized by fragmented farming, small land holding and low production output per unit area. About 81% of the farmers in the rural area own 1 hectare or less than 1 hectare of farm land (BBS, 1984 a).

Rice is the major food crop of the Bangladesh, being supplemented by wheat, sugar-cane, potato, legumes and a variety of other food staffs, and has become essential for sustaining life in this part of the world. About 89% of the

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total cultivable land (11.5 million hectares) is devoted to rice cultivation, producing more than 20 million metric tonnes of paddy annually (BBS, 1984b). With the distinct agro-climatic and socio-economic conditions of the farmers, rice crop is grown and harvested during 'Boro' (April to June) 'Aus' (July to August) and 'Aman' (November to December) seasons.

Rice cultivation in Bangladesh has been revolutionised with the introduction of high yielding varieties (HYVs) in the past two decades. Although the HYVs coverage is only 25% of the total rice area contributes about 40% to the total production (BBS, 1984b), the impact of increased production significantly alleviated the chronic shortage of rice but did not mitigate the food requirement problem of the country because of rapid increase in population. Even with the high concentration of population in the rural areas, farm wages vary with the seasons is an indication of labour scarcity particularly during harvesting time when farm wages is highest (BBS, 1985). In a study, Hossain (1985) reported that 32% of the labour required during rice production in Bangladesh is devoted to harvesting, field transport and threshing and 11% to cleaning and parboiling. With these high percentae of labour requirement, post-harvest operations help in solving unemployment in the rural areas and provides opportunity for employment of the rural women whose main activity is within the compound of the homeyard where cleaning to storage operations are made (McCarthy, 1980; Clay and Khan, 1977; and Andrew, 1980).

Labour utilization and distribution varies in different places depending upon the traditions, customs and prevailing practices. In some areas, harvesting to

threshing operations are done by hired labourer for which the farmer is to spend money in cash while in other areas threshing is done by family labourer for which no cash payment is made. This study was made, therefore, to gather insight on the farmers' labour unilization, cost and distribution in the different post-harvest operations.

MATERIALS AND METHODS

Five districts namely, Dhaka, Comilla, Sylhet, Bogra and Rajshahi were selected for rice post-harvest loss assessment study, on the basis of production, weather condition, accessibility, cropping pattern and production surplus. A total of 35 villages were selected for the study. The villages were selected based on accessibility, co-operation of the farmers, representativeness in the cropping pattern and post-harvest practices of the district. The study was conducted during 1983 'Aman' and 1984 'Boro' and 'Aus' harvest seasons.

A survey questionnaire was formulated on labour use, distribution, labour classification, mode of hiring, labour source and mode of payment. This was used to survey each farmer co-operator of loss assessment study. In all, 196 farmers were interviewed on different rice post-harvest operations and the collected data were analyzed and tabulated. Labour used for harvesting to threshing operations were computed on per hectare and cleaning to milling on per ton basis. The cost of family labour working in the field was estimated on the basis of the equivalent remuneration they get from any similar work performed by them in the field of other farmer at that locality. The post - harvest operations studied were harvesting, field stacking, field transport, threshing, cleaning, drying, parboiling, storage and milling.

RESULTS AND DISCUSSION

Labour Utilization and Distribution

It was gathered from the farmers that both family and hired labourers were utilized in the post-harvest operations. All members of the family (man, women and children) capable of working were used while hired labourer was either man or woman depending upon the operation involved. Hiring was done on daily basis and on short or long term contract. Short term contract is a substitute to daily basis as harvesting and threshing of a certain area of land and long term contract requires longer time and more work involvment as processing (parboiling, drying and milling) of certain amount of grain. Labour compensation was given in cash or kind or in both. Compensation in kind was either free meals (1, 2 or 3 times a day), share of the crop (10 to 12% of the yield) in harvesting to threshing, commodity goods as clothes (Sarees for women), or combination of cash and kind depending upon the nature, quantity of the work and the agreed mode of payment.

Harvesting to field transport operations were combined because farmers were not able to split the labour involvement in harvesting, field stacking/bundling/ drying and field transport. Although there was differences in labour utilization in harvesting to field transport operations among the seasons because of weather. Result showed that the labour distribution did not vary widely, 64% 64% and 65% of the total labour used in harvesting to threshing for 'Aman', 'Boro' and 'Aus' seasosns, respectively (Table-1, Appendix-A). The total labour used from harvesting to threshing was observed almost similar in all the seasons studied utilizing about 1/3rd of

labour in threshing with the rest in harvesting to field transport operations. It can be noted from table 1 that since these operations were performed outside the farm house, more labourers were hired (64 to 65%) and 95% of the work was done by male.

Payment of labourers in cleaning to milling operations were based on quantity of grain processed. Labour used in these operations were observed lower in 'Aman' seasons by 40 and 49man-hr/t compared to 'Boro' and 'Aus' seasons, respectively (Table-2, Appendix-A). Time spend in cleaning was almost similar for all the seasons but much lower in drying during 'Aman' season. This difference could be attributed because farmers rarely dry the grain in 'Aman' season harvest because of the dry weather and climate. The farmers, however, devoted their time in bringing small batches of paddy to huller mills for milling and in storage of 'Aman' harvest because well dried grains observed better storability. Since these operations were mostly done indoors or within the farm yard, mainly family labourers (61 to 75%) female labourers were participated (Table-2).

Labour Cost and Distribution :

Labour cost in harvesting to threshing operations were observed lower in 'Aman' season by Tk. 111.oo and Tk. 125.00 per hectare and in cleaning to milling operations by Tk 122.00 and Tk.148.00 per ton compared to 'Boro' and 'Aus' seasons, respectively (Table-2&3, Appendix-A&B). This labour cost corresponds to the labour used, man-hr/hectare and man-hr/ton in different operations explained in table 1 and table 2. Percentage distribution of labour use and labour cost was observed almost similar in harvesting through threshing operations because majority

of the work was done by hired labourer (Table 1 and Table-3). In cleaning to milling operations, however, the distribution of cost changed with the operation and season because of the different rates and farmers' valuation of the family labourer but the trend observed was similar (Table 2 and Table 3).

CONCLUSIONS AND RECOMMENDATION

It is concluded from this study that labour used by the farmers was about the same in harvesting to threshing of rice for all the seasons but varies in cleaning to milling operations with the 'Aman' season slightly lower. Also, farmers spent more time in harvesting to field transport, theshing, milling, drying (except in 'Aman' season) and storage. For harvesting to threshing operations about 64% labourers were hired and the distribution by sex was 95% male. In cleaning to milling operations where work was done within the house or farmyard, 61 to 75% family labourers were involved and a majority of female labourers (67 to 73%) were participated.

The percentage of hired labourers and male workers were very high in harvesting to threshing operations. Although cleaning to milling operations were done within the homeyard, a large percentage were still hired (25 to 39%) and male workers involvement were 27 to 33%).

The use of pedal thresher may be recommended because threshing by pedal thresher can be exclusively done by family labourer. This will not only provide more time for the farmers to work elsewhere but also provide more employment of the farm family.

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Appendix-A

Table-1: Labour Utilization and Distribution in Harvesting to Threshing Operations by Season.

Labour use and distribution	Aman	Boro	Aus
Labour (man-hr/hectare)	329	334	339
Distribution%			
By Operation :			
Harvesting, field stacking and field transport	64	64	65
Threshing	36	36	35
By Source :			
Family	36	36	37
Hired	64	64	63
By Sex :			
Male	95	95	95
Female	5	5	5

Table-2: Labour Utilization and Distribution in Cleaning to Milling Operations by Season.

Labour use and distribution	Aman	Boro	Aus
Labour (man-hr/hectare)	134	174	183
Distribution%			
By Operation :			
Cleaning / winnowing	16	15	16
Drying	8	23	25
Parboiling	10	8	7
Storage	20	16	15
Milling	46	38	37
By Source :			
Family	75	70	61
Hired	25	30	39
By Sex :			
Male	27	33	30
Female	73	67	70

Appendix-B

Table-3: Labour Cost and Distribution in Post-Harvest Operations by Season.

Labour cost and distribution	Aman	Boro	Aus
Harvesting to tgriyggubg (Tk./ha)	1114	1225	1239
Distribution%			
By Operation :			
Harvesting, field stacking and field transport	67	64	65
Threshing	33	36	35
Cleaning to milling, (Tk./ton)	401	523	549
Distribution, %			
Cleaning / winnowing	12	12	12
Drying	6	18	20
Parboiling	7	6	6
Storage	23	19	18
Milling	52	45	44

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STORAGE OF FOODGRAINS IN THE SELECTED FLOOD PRONE AND FLOOD FREE AREAS OF BANGLADESH: A FARM LEVEL STUDY

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ABSTRACT

The study was attempted to make a comprehensive picture of foodgrains (rice and wheat) storage methods in the selected floodprone and flood free areas of Sirajgonj and Mymensingh districts. Farmers were found to use old and indigenous methods of storing foodgrains. Wooden, bamboo, earthen containers were mostly used by the farmers. In some cases drum, tins, bags and sacs were used too. None except the extra large farmers of the flood prone areas used inhouse permanent structures. Average quantity stored in flood free areas was more than that in flood prone areas. Storing period did not exceed one year in any case. Cost of storage was very low and consisted mainly of the cost of structure or purchasing the items of storage. Instored foodgrains were affected mainly by insects, pests and diseases, etc. But the extent of losses was not more than 3 percent. The losses were incurred due to non-use of any modern storage methods. In order to overcome storage loss in the flood prone areas, it is suggested that the public authority should come forward to construct some storage godowns so that people can have access to cheaper and so- fer storage facilities so that the overall storage loss can be minimized.

INTRODUCTION

Storage as function of marketing involves the holding and preservation of foodgrains like other commodities through time. Storing foodgrains, especially storing of rice and wheat is very much essential for the farmers of Bangladesh because of the seasonal nature of the crops and consumers want them at a resonable price throughout the year. Crops produced, whether for consumption or for markets, during the year, especially during the rainy season, when frequent flood damages harvested crops has to maintain a regular supply to meet the day to day necessities and it can only be ensured through proper storage.

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Storage is also essential to add time utility for many products and also for form utility to be used as raw materials later on for finished products. The ownership of modern storage facilities is sometimes an issue in less developed countries. Merchants in control of limited storage availability profitted from speculative operations and many countries storage facilities are turning increasingly to public ownership (Rahman, 1970). In Bangladesh the Government has a system of storing foodgrains through LSDs & CSDs godowns. But they store only 16 percent of the total production, and the farmers and merchants store the rest 84% of the total grains produced. The storage structures that are used in these three levels throughout the country are almost the same to the level of storing in a particular district (Mandal, 1980). So, farmers are the largest storers of foodgrains in flood free areas as well as in flood prone areas. They store foodgrains not only for their own consumption but also for payments in kind to labour feed, seed and in some cases for a rise in price. They store foodgrains to ensure secured supply of food to the families during the period when possibilities of floods and damage of things cannot be ruled out. In 1988 about 75573 tons of local T.Amon and 48994 tons of HYV T. Amon were damaged in Mymensingh district. In Pabna district the damages were 146746 metric tons to T Aman during the same period (BBS, 1989). Otherwise, the farmers of Bangladesh usually do not store foodgrains for a longer period because of the cost involved and the incidence of instore damage. The storae costs includes the physical loss of grain, the opportunity cost of money tied up and the cost of building and maintaining storage space. The length of time of farmer stores his grain depends mostly upon the length of time between crops, Wilson et, al (1970) report that in

Ludhiana, farmers had sold or consumed over 80% of their wheat by the time of the maize harvest.

The farmers of Bangladesh, as a practice, store their foodgrains either in their house or enclosed by sheds depending upon the quantity stored. The methods in which they store foodgrains are two viz., the exclusive method and inclusive method. The exclusive method includes those which are adopted mainly by the rich farmers for storing grains in "Gola" or Godum" (Godown). The inclusive methods include those when the grains are stored in the dwelling houses. For this method, containers of different descriptions including "Dole" "Matka, "Jala" are used. These processes are meant for normal years and there appears to be in specific arrangement for storage against floods, when the amount of crops are lost and the farmers have to incur enormous economic losses.

Storing cost and volume of grain stored and the period of storage differ from farm to farm. The large farmers have relatively less problems than the smaller farmers who have no or little alternative for making labour payment during the harvesting season, become compelled to dispose of large quantities of harvested grains for payment to labourers, thereby leaving little for storage.

No study in this area appears to have been conducted in the country not to speak of floodprone zones in the country where the critical situation deserves a careful and effective investigation. The present study was undertaken to have a comparative picture about the storage structure and their costs so that suggestive measures could be provided for the storage efficiency and policy implications.

MATERIALS AND METHODS

For the data of the present study three villages namely, Italy under Kazipur upazila and Teghury and Faridpur under Raiganj upazila of Sirajgonj district and three villages namely, Rudragram, Gaisapara, Vaoaliapara under Trishal upazila of Mymensingh District were selected purposively. The village Italy is situated at 16 kilometers of the district headquarters. Faridpur and Teghury are located 6 miles and 5 miles away from the upazila headquarter. The villages are flooded almost every year by the mighty river Jamuna. The villages under Trishal upazila are situated at 16 kilometers away and 2 kilometers away from the upazila headquarters and only 1.5 kilometers away from the Dhaka Mymensingh highway.

Samples of the present study were selected from amongst the surplus foodgrain storer-farmers. They were classified into medium, large and extra large farmers having the farm size 2.5 to 6.0 acres, 6.01 to 11 acres and>11.01 acres respectively. Fifty storer-farmers from each of the two areas constituting 20.83%, from the floodprone and 11..93% from the flood free areas were selected for interview. The sample selection was purposive because farmer characteristics were found to be more or less identical and those were selected whose characteristics were found to be slightly different from each other. The selected farmers were interviewed by using an previously prepared questionnaire. The interview was done during the months of August and September, 1990, during the respondents leisure time. The collected data, after through checking were transferred to a mastersheet. They were properly classified and tables were prepared by using average and percentage etc. Co-

efficient of variation was foundout in order to determine variations of storing foodgrains by the different farm size categories.

RESULTS AND DISCUSSION

Storing Methods:

Like other areas, the farmers of the study areas stored their foodgrains for consumption need, seed need and the need to meet social organization and family and production expenses. So, their storages was mostly seasonal. Only the well to do farmers stored some amount of foodgrains for comparatively longer period. But their methods of storing were indigenous and age old. The methods are inclusive. People have rejected using exclusive methods for want of security, breaking of joint family and for population influx. Both the mehtods include the structures like wooden bamboo containers ("Dole", "Ber", "Dhari"), earther containers ("Kuthi", "Jala", Motka", "Kalash" etc.), metal containers (Steel drums, Kerosine tin etc) plastic containers, Gola (hut built, bamboo split walled cylindrical and staged above ground of 4.5 ft. height), Gunny bags, Wooden containers, Bunga (cane and bamboo made inverted cone stucture) and "Machan".

Number of containers used :

The number of container used by different categories of farmers are presented in table-1. (appendix-A). The table reveals that medium farmers of floodfree areas used more Dole and Ber but less Drum and Gunny bags etc. than those in the floodprone areas. Large and extra large farmers of this are too used more Dole and Ber than those of the floodprone areas. As a result total possession of Dole and Ber in the floodfree area was more but less the possession of other containers than those in the floodprone areas

Number of store farmers using containers :

Data in this regard have been presented in table-2 (appendix-A). The table reveals that the number of storer using Dole and Ber in the floodfree areas were more than storers in the floodprone areas. But the total number of storers using drum, gunny bag, kalash etc. in the floodprone areas were more than those in the floodfree areas. Hundred precent large farmers of the floodprone areas used Dole, Ber and Drum and hundred present those of floodfree areas used Dole and Ber. Number of extra large farmers using Ber, Drum, Gunny bags and Kalash were more in the floodprone than those in the floodfree areas. None but 83% of the extra large farmers of floodprone areas used Machan.

Quantity Stored per container

The farmers started storing their foodgrains from immediately after harvest. From this they used to sell some quantity immediately and from the rest they used for consuming and selling as an when necessary. The total quantity stored by medium and extra large farmers of the floodfree areas was more than the quantity stored by those of the floodprone areas (Table-3, Appendix-B). In both the areas quantity stored by the extra large farmers was the highest and quantity stored by the medium farmers was the lowest. In the floodfree areas the quantity stored on the Machan by the extra large farmer and the quantity stored in Ber by all the farmers both in floodprone and floodfree areas were the highest.

Storing time :

Data regarding this (table-4, Appendix-B). Showed that maximum time for which all the categories of farmers under both the areas Drum, Machan and Ber. Storing for half a year or less were Dole and other containers by all the farmers in both the areas. The reasons for using Drum

and Machan were that the one is a metaled hard thing which cannot be destroyed in any adverse chimate and the other is the permanent settling moving of which is not an easy task. The Machan as reported by the farmers lasts for 2-3 years. Drum lasts for 16-18 years while the Ber lasts for 10-15 years and the Dole for 5-7 years.

Containing Capacity :

Differernt types of containers have different containing capacity bacause these are made for different purposes and of different sizes. In the floodprone areas the medium, large and extra large storer-farmers reported that their container Dole had the storing capacity ranging from about 17 to 24 maunds, Ber about 81-99 maunds, drum about 3 maunds, gunny bags about 2.5 maunds, Kalash about 1 maund but Machan which is used by the extra large farmers had the capacity of storing foodgrains upto 640 maunds.

In floodprone areas the capacity of storing foodgrains by all the different types of containers were more or less similar to those in the floodprone areas. Here, the only exception is that Machan contained about 2000 maunds of foodgrains.

Costs of containers :

The cost containers were the cost incurred for making, installing and maintaining the storage structures. It was found that the costs of different containers did not very according to farm size, but varied according to type of structure. Findings relating to this are presented in table-5 (Appendix-C). In the floodprone areas, Dole cost about Tk. 108.00 of which about 92% was for its making. Ber cost about Tk. 343.00 of which about 95% was for its making and installation within the dwelling houses. Similar cost was also incurred for Drums. No cost was

incurred for maintaining gunny bags and Kalash. Maximum cost was incurred for making and maintaining Machans. In the floodfree areas again the cost of Machan was the highest of all types of structures. Cost of other types of containers were almost similar to those in the floodprone areas.

Heterogenity in storing foodgrains

For this co-efficients of variation of the volume of stored foodgrains according to farm size were foundout (Table-6, Appendix-C). It appears that co-efficients of variation of stored foodgrains are different in different areas and different farm sizes. In the floodprone areas the co-efficient of variation for the large farmers are the lowest while that of the extra large farmers is the highest. This means that the heterogenity in storing foodgrains for the extra large farmers is the highest and that of the large farmers is the lowest. In the floodfree areas the co-efficient of variation of stored foodgrains are higher for all the categories of farmers. The special finding is that the co-efficeint of variation of the medium farmers is even higher than that of the extra large farmers of the floodprone areas. This meant that heterogenity of storing foodgrains is wide in both medium and extra large farmers.

Factors of losses of instored foodgrains :

Foodgrains like rice and wheat are stored by the farmers for various reasons.While in store huge quantity of foodgrains are wasted by insect, micro organisms and rodents. Studies on the extent of losses by the above factors fly around 10% here, 50% there and 20% in the world as a whole. No estimate has yet been made about losses occurred in the flood affected areas. Quantitative loss due to insects alone estimate to be 15% over a

storage period of six months in Mymensingh Town. The Agricultural Marketing study Group's report, 1970, estimated a rodent loss in storage to be 3.05%. Occurrences of less than 30% germination has been reported during the 1974 amon season from several farms supplied with seeds from Government and BADC warehouses (Mandal, 1980). In India roughly 6.6% of the marketed foodgrains are lost in each year. Of this 2.55% are attributed to insects, 2.50% to rodents and the remaining to birds and moisture (Moore et, al. 1973). In store losses, however, are much lower than the above findings (Table-7, Appendix-D). On an average storage losses due to various factors in the floodprone and floodfree areas are estimated to be 2.47% and 2.63% respectively. Under all the circumstances medium farmer's losses were the highest in both the areas. The instore food grain loss figures are however, astonishingly lower than any figures of the previous studies.

CONCLUSIONS

On the basis of the findings of the study it can be concluded that the methods by which the farmers stored their foodgrains are indigenous and cannot be said modern. For both the floodprone and floodfree areas the same and similar methods of storing foodgrains were used by all the surplus farmers. Exclusive methods of storage were totally absent because of many factors out of which want of security was the main. Volume of foodgrain quantity stored in respect of time and farmers category were heterogenous. The cost of making, installing and maintaining inclusive storage structures was not too high and the period for which to structures last was not too low. Further, instore loss of foodgrains was not high.

The storing of foodgrain does not only supply grains to the farmers and when required but it also has the economic implication of increased price in the market. So if the whole storing arrangement can be brought under a social system, the benefit, thus obtained through price increase on and off season and steady supply all over the year could be injoyed by both producers and consumers alike.

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Table-1: Average number of container per storer according to farm size

Number of container / Farm size categories	Floodprone area						Floodfree areas					
	Dole	Ber	Drum	Gunny bag	Kalash	Machan	Dole	Ber	Dram	Gunny bag	Kalsh	Machan
Medium (2.5-6 acres)	1.7	2.0	1.9	1.6	1.4	-	2.7	2.1	1.3	1.0	1.5	-
Large(6.01-11 acres)	2.0	2.8	2.9	4.5	2.4	-	3.6	3.2	2.2	0.1	2.1	-
Extra Large (above 11 acres)	1.7	2.5	4.0	6.1	0.4	0.8	5.1	6.0	4.5	1.5	1.5	0.1
Total	5.4	7.3	8.8	12.2	4.2	0.8	11.4	11.3	7.8	2.6	4.6	0.1

Table - 2: Number and percent of storer using container

Number of container / Farm size categories	Floodprone area						Floodfree areas					
	Dole	Ber	Drum	Gunny bag	Kalash	Machan	Dole	Ber	Dram	Gunny bag	Kalsh	Machan
Medium (2.5-6 acres)	20 (87)	23 (100)	23 (100)	7 (30)	11 (48)		23 (100)	23 (100)	17 (74)	4 (17)	12 (52)	-
Large(6.01-11 acres)	15 (100)	15(100)	15 (100)	13(87)	6 (40)		16(100)	16 (100)	17 (88)	-	10 (63)	-
Extra large (above 11 acres)	9 (75)	12 (100)	12 (100)	11 (92)	1 (8)	10 (83)	10 (91)	10 (91)	10 (91)	8 (73)	6 (55)	1 (9)
Total	44	50	50	31	18	10	49	49	44	12	28	1

Appendix-B

Table- 3: Average quantity stored per container according to farm size categories

Farm size categories	Floodprone area							Floodfree areas						
	Dole	Ber	Drum	Gunny bag	Kalash	Machan	T. quan. St. mds.	Dole	Ber	Dram	Gunny bag	Kalsh	Machan	T. quan. st. mds.
Medium	21.13 (11.49)	146.09 (79.47)	11.18 (6.08)	3.48 (1.89)	1.78 (0.98)	-	183.66 (100)	61.78 (26.69)	162.39 (69.99)	3.67 (1.58)	2.0 (0.86)	1.91 (0.88)	-	231.82 (100)
Large	44.67 (12.15)	301.33 (81.96	8.73 (2.37)	10.8 (2.94)	2.43 (0.62)	-	367.96 (100)	98.56 (25.13)	283.75 (72.30)	6.69 (1.71)	0.93 (0.24)	2.44 (0.62)	-	392.37 (100)
Extra large	26.9 (3.23)	266.67 (32.0)	12.17 (1.26)	15.17 (1.80)	1.78 (0.21)	512.5 (61.5)	835.19 (100)	128.64 (15.05)	523.64 (60.0)	13.46 (1.29)	5 (0.59)	1.55 (1.80)	181.82 (21.27)	854.11 (100)
Total							1386.81							1478.83

Table-4: Foodgrains storing items

Farm size categories	Floodprone area						Floodfree areas					
	Dole	Ber	Drum	Gunny bag	Kalash	Machan	Dole	Ber	Dram	Gunny bag	Kalash	Machan
Medium	0.50	0.91	1.0	0.20	0.35	-	0.46	0.50	1.0	0.14	0.32	-
Large	0.53	0.90	1.0	0.21	0.32	-	0.51	0.49	1.0	0.14	0.40	-
Extra large	0.51	0.93	1.0	0.20	0.30	1.0	0.48	0.49	1.0	0.15	0.38	1.0

Table-5: Average cost of container

Cost	Floodprone area						Floodfree areas					
	Dole	Ber	Drum	Gunny bag	Kalash	Machan	Dole	Ber	Dram	Gunny bag	Kalsh	Machan
Installation / Making cost (Tk.)	99.33 (92.3%)	327.54 (95.4%)	336.20 (97.9%)	10.06 (100%)	33.15 (100%)	650.00 (92.3%)	103.36 (92.3%)	88.52 (87.4%)	339.65 (98.3%)	12.20 (100%)	35.18 (100%)	1500.00 (93.7%)
Maintenance Cost (Tk.)	8.28 (7.7%)	15.95 (4.6%)	7.18 (2.1%)	-	-	54.00 (7.7%)	10.36 (9.1%)	12.72 (12.6%)	5.67 (1.7%)	-	-	100.00 (6.3%)
Total Cost (Tk.)	107.61	343.49	343.38	10.06	33.15	704.00	113.72	101.24	345.32	12.20	35.10	1600.00

Table-6: Co-efficient of variation of volume of stored foodgrain according to farm size.

	Floodprone areas			Floodfree areas		
	Mddium	Large	Extra large	Medium	Large	Extra large
Mean (x)	178.0	346.97	833.83	214.22	415.44	908.18
Standard Deviation (Sd)	55.10	72.48	293..83	80.67	106.31	407.57
Co-efficient of variation	31.o%	20.89%	35.24%	37.67%	25.59%	44.88%

Appendix-D

Table-7: Factors of losses of instored foodgrain and average quantity per farmer

Factor of losses	Floodprone areas			Floodfree areas		
	Mddium	Large	Extra Large	Medium	Large	Extra Large
Thermal properties of foodgrain not maintained (md)	0.105 (2.0%)	0.12 (1.1%)	0.194 (1.4%)	0.08 (1.1%)	0.10 (1.1%)	0.172 (.8%)
Thermal properities of Structure not maintained (md)	0.09 (1.7%)	0.114 (1.1%)	0.182 (1.3%)	0.069 (0.0%)	0.091 (0.9%)	0.173 (0.8%)
Losses due to mites, insects and rodents (md)	2.37 (45.4%)	4.97 (46%)	7.333 (55.2%)	3.41 (46.35%)	4.22 (45.9%)	9.0 (44%)
Weight of foodgrain decreased (md)	2.652 (50.8%)	4.933 (48.7%)	6.25 (44.8%)	3.804 (51.6%)	4.78 (52%)	11.09 (54.3%)
Total (md)	5.217	10.137	13.959	7.363	9.191	20.435
Percent loss of total grain stored	2.84	2.75	1.67	3.18	2.34	2.39
Average loss	-	-	2.47	-	-	2.63

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এক গ্রাম এক সংগঠন ঃ মূলে প্রত্যাবর্তন

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মোঃ হাবিবুর রহমান [২]

বস্তুসার

আদিকাল থেকে নানা ধর্ম, বর্ণ ও গোত্রের লোক গ্রামে বসবাস করে আসছে। বাংলাদেশের গ্রামগুলো বিভিন্ন সমস্যা যথা-শিক্ষা ও সচেতনার অভাব, রোগ-শোকের আধিক্য, চাষাবাদী জমির ক্রমহ্রাসমান অবস্থা, আধুনিক কৃষি উপকরণের অপ্রতুলতা ও উচ্চমুল্য, ব্যাপক বেকারত্ব, গ্রাম থেকে শহরে জনশক্তি ও পুঁজির স্থানান্তর প্রভৃতির আবর্তে হাবুডুবু খাচ্ছে। এসব সমস্যা নিরসনে সরকারী ও বে-সরকারী পর্যায়ে বহুবিধ পদক্ষেপ গ্রহণ করা হয়েছে। সরকারী পর্যায়ে দারিদ্র বিমোচনের অন্যতম হাতিয়ার হিসাবে 'সমবায়' কে অধিকতর গুরুত্ব দেয়া হয়েছে। সনাতনী সমবায়ের (যা ১৯০৪ সালে শুরু হয়েছিল) সাথে ষাটের দশকে যুক্ত হ'ল দ্বি-স্তর সমবায় পদ্ধতি। দ্বি-স্তর সমবায় শুরুতে সার্বিক উন্নয়নের কথা বললেও পরবর্তীতে টারগেট গ্রুপ এ্যাপ্রোচে কাজ শুরু করে। কিন্তু দেখা গেল, কাংখিত ফল লাভে এ সমবায় ক্রমশঃ ব্যর্থ হচ্ছে। এমনি একটি পর্যায়ে বলা হ'ল সার্বিক গ্রাম উন্নয়ন সমবায়ের কথা যেখানে ধনী-গরীব, নর-নারী, যুবক-যুবতী এবং পেশা নির্বিশেষে সকলেই অবাধে সদস্য হতে পারে। প্রচলিত সমবায়ের সাথে সার্বিক সমবায়ের মূল পার্থক্য এখানেই।

গ্রামের সামগ্রিক উন্নয়নের লক্ষ্যে গৃহীত সার্বিক গ্রাম উন্নয়ন কর্মসূচী মাঠ পর্যায়ে বাস্তবায়ন শুরু হয়েছে। কিন্তু দেখা যাচ্ছে গ্রামবাসীগণ সমবায় কিংবা কোন সংগঠনের কথা শুনে খুব একটা উৎসাহিত হচ্ছে না। এর কারণ অনুসন্ধানে জানা যায় যে তারা অতীতে বিভিন্নভাবে কতিপয় সংস্থার দ্বারা প্রতারিত কিংবা বঞ্চিত হয়েছে যার বিরূপ প্রভাব এ কর্মসূচী বাস্তবায়নে পরিলক্ষিত হয়েছে। তবে প্রথমদিকে তারা নেতিবাচক মনোভাব দেখালেও পরবর্তীতে ইতিবাচক সাড়া দিয়েছে। গ্রামকে বহুধা বিভক্তির স্থলে একইসূত্রে বাঁধার একটি প্রয়াস এ কর্মসূচীতে থাকার কারণে এরূপ ঘটতে পারে বলে প্রতীয়মান হয়েছে। এছাড়া অবিরাম প্রশিক্ষণ ও প্রেষণার মাধ্যমে গণঅংশগ্রহণ বাড়ানো সম্ভব বলে আশা করা যায়। আলোচ্য নিবন্ধে এরূপ একটি বিশ্লেষণাত্মক পর্যালোচনা করার প্রয়াস নেয়া হয়েছে।

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১ প্রকল্প পরিচালক, সিভিডিপি, পল্লী উন্নয়ন একাডেমী, বগুড়া।
২ উপ প্রকল্প পরিচালক, সিভিডিপি, পল্লী উন্নয়ন একাডেমী, বগুড়া।

ভূমিকা

গ্রাম হলো একটি ক্ষুদ্র ভূখন্ড, যেখানে কিছুসংখ্যক লোক একত্রে বসবাস করে। বাংলাদেশে গ্রামের সংখ্যা আটষট্টি হাজার। এসকল গ্রামে মানুষ গোষ্ঠিবদ্ধভাবে বাস করে। এখানে পরস্পরের প্রতি সহানুভূতি ও গোষ্ঠি-সর্ম্পক শহুরে জীবন অপেক্ষা বেশ গাঢ়। তাই প্রায়শঃই দেখা যায় নানা দল ও মতে বিশ্বাসী হয়েও গোষ্ঠি- স্বার্থে গ্রামবাসী থাকে ঐক্যবদ্ধ । গ্রামে নানা বংশের লোকের বসবাস। এদের মধ্যে চৌধুরী, তালুকদার, মণ্ডল, সরকার, সৈয়দ, সরদার, শেখ, প্রধান, খন্দকার, দেওয়ান, প্রামাণিক, হাওলাদার, কাজী, মিয়া, মৃধা, মজুমদার, আকন্দ উল্লেখযোগ্য। তবে প্রত্যেক গোত্রের সামাজিক বন্ধন বেশ মজবুত। বংশ পরিচয়ে বিশেষতঃ চৌধুরী, তালুকদার, সৈয়দ, সরদার কিংবা মন্ডল গোত্রীয় লোকজন অপেক্ষাকৃত বেশী গর্ববোধ করে।

বাংলাদেশের গ্রামসমূহে প্রাচীন কাল থেকেই বিভিন্ন ধর্মীয় লোকজন সম্প্রীতির সাথে পাশাপাশি বসবাস করে আসছে। এখানে মুসলিম প্রধান গ্রামের সংখ্যাই বেশী; কিছু কিছু হিন্দু প্রধান গ্রামও রয়েছে। দেশের অন্যান্য এলাকায় বৌদ্ধ জনগোষ্ঠির বসবাস সীমিত হলেও চট্টগ্রাম এলাকায় তাদের বসতি বেশ লক্ষ্যণীয়।

দেশের প্রায় ৮৯.৭১ শতাংশ লোক গ্রামে বসবাস করে (বিবিএস, ১৯৯১)[৩]। গড়ে প্রতি গ্রামে ২৯০টি পরিবার ও ১৫৪০ জন লোকের বসবাস। এদের সিংহভাগই নিরক্ষর । কৃষিজীবি হলেও খুব স্বল্পসংখ্যক সরাসরি জমির মালিক এবং বাকিরা কৃষির উপর প্রত্যক্ষ ও পরোক্ষভাবে নির্ভরশীল। কৃষক, শ্রমিক, জেলে, তাঁতী, কামার, কাঠমিস্ত্রি, নরসুন্দর, ব্যবসায়ী প্রভৃতি নানা পেশার সমাবেশ দেখা যায় বাংলাদেশের গ্রামে।

গ্রামে রয়েছে জন, জমি, জল আর বনজ সম্পদের সমারোহ । অতীতে জন অপেক্ষা জমির অনুপাত ছিল বেশী, বর্তমানে প্রবল জনসংখ্যার চাপে এ চিত্র বিপরীত অবস্থানে পৌঁছেছে । গ্রামের মানুষের প্রধান আয়ের উৎস কৃষি জমি । অন্যান্য উৎসের মধ্যে রয়েছে ব্যবসা, শ্রম বিক্রয় ইত্যাদি।

গ্রামে বহুমুখী সমস্যা বিদ্যমান। জনসংখ্যা বৃদ্ধির কারণে চাষাবাদী জমির সংকট ক্রমবর্ধমান । অধিকাংশ জনগোষ্ঠি নিরক্ষর, শিক্ষিত জনগণের শহরমুখী অভিপ্রায়ন, সম্পদের সীমাবদ্ধতা ও অপরিকল্পিত ব্যবহার, স্বাস্থ্য ও পুষ্টি সম্পর্কীয় সচেতনতার অভাব, রোগ-শোকের আধিক্য, অনুন্নত যোগাযোগ ব্যবস্থা, অনুন্নত কৃষি ব্যবস্থা, কৃষি উপকরনের অপ্রতুলতা, ব্যাপক বেকারত্ব, শিক্ষার সীমিত সুযোগ-সুবিধা প্রভৃতি

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৩. Statistical Year Book of Bangladesh, 1991, BBS, Dhaka, 1991.

গ্রামবাংলার উল্লেখযোগ্য সমস্যা। এসব কিছু মিলে সৃষ্টি হয়েছে দারিদ্র । গ্রামের প্রায় ৮০% লোক এ দরিদ্রতার শিকার।

জনসংখ্যা বৃদ্ধির কারণে আবাদী জমির উপর ব্যাপকভাবে বসতি গড়ে উঠেছে। ফলে চাষযোগ্য জমি হ্রাস পাচ্ছে এবং সেসংগে মৌসুমী বেকারত্ব ক্রমশঃ বৃদ্ধি পাচ্ছে। গ্রামে কোন শিল্পায়ন প্রচেষ্টা নাই। ফলে গ্রামের ছিন্নমুল মানুষ প্রতিনিয়ত শহরমুখী হচ্ছে। এদেরই কিছু সংখ্যক কাজ না পেয়ে চুরি, ডাকাতি, ছিনতাই প্রভৃতি অসামাজিক কার্যকলাপে লিপ্ত হচ্ছে ।

গ্রামে পুঁজির স্বল্পতা প্রকট। সেখানে বিনিয়োগের মূল ক্ষেত্র কৃষি। ফসল বিক্রয়লব্ধ অর্থ দ্বারা প্রয়োজনীয় দ্রব্য-সামগ্রী ক্রয়ের জন্য গ্রামবাসীরা সাধারনতঃ শহরে যান। হস্ত মজুদ অর্থ তারা অধিকাংশ ক্ষেত্রে ব্যাংকে জমা করেন। দেখা যাচ্ছে, প্রকারান্তরে গ্রামীন অর্থ শহরের অর্থনৈতিক স্বচ্ছলতা আনয়নে বিনিয়োজিত হচ্ছে। ফলে সেখানে বিভিন্ন শিল্প প্রতিষ্ঠান ও কল-কারখানা গড়ে উঠেছে এবং গ্রাম বরাবরই অস্বচ্ছল থেকে যাচ্ছে। এ প্রবনতা রোধকল্পে গ্রামোন্নয়নের শক্ত প্রাতিষ্ঠানিক ভিত রচনা করা আজও সম্ভব হয়নি।

সমবায়ের মাধ্যমে সার্বিক গ্রাম উন্নয়ন

গ্রামবহুল বাংলাদেশে দরিদ্রতা ক্রমশঃ চরম আকার ধারন করছে। একেবারে দারিদ্র বিমোচন হয়তবা সম্ভব নয়, তবে কমানো যেতে পারে। গ্রাম উন্নয়নে তথা দারিদ্র বিমোচনে সরকারী ও বে-সরকারী পর্যায়ে বিবিধ প্রয়াস গ্রহণ করা হয়েছে। কিন্তু একক প্রচেষ্টায় দরিদ্রতা মোচন বেশ দূরুহ ব্যাপার। সেজন্য যৌথ উদ্যোগ তথা সমবায়কে দারিদ্র বিমোচনের অন্যতম কৌশল হিসেবে বিবেচনা করা হয়েছে। শতাব্দীর গোড়াতে "কো-অপারেটিভ ক্রেডিট সোসাইটিজ এ্যাক্ট (নং-১০), ১৯০৪" প্রবর্তনের মাধ্যমে উপমহাদেশের ক্ষুদ্র কৃষক ও দরিদ্র জনগোষ্ঠিকে ঋণ সরবরাহ করে আয় ও উৎপাদন বৃদ্ধি তথা দারিদ্রমুক্ত করার একটি প্রয়াস নেয়া হয়। এর পূর্বেও প্রজাকল্যাণার্থে কৃষি বিভাগের গোড়াপত্তনসহ ভূমি উন্নয়ন ঋণ আইন (১৮৮৩), কৃষক উন্নয়ন ঋণ দাদন আইন (১৮৮৪), প্রজাসত্ব আইন (১৮৮৫) প্রভৃতি চালু করা হয়। যা হোক, ১৯০৪ সালের সমবায় ঋণ দান আইন 'রাজকীয় আইন পরিষদ' এর নিকট উপস্থাপনকালে স্যার ডেভজিল আইবারসন (Sir Devzil Ibberson) বলেছিলেন যে, "Only along the co-operative route will India find the way from poverty to plenty"[৪]। কিন্তু নানাবিধ কারণে উপমহাদেশের এ অংশে প্রত্যাশিত

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৪ Kamra K. Pawan- Co-operative Management : Practices, Problems & Prospects, New Delhi, India, 1987,

প্রাচুর্য্য দেখা যায়নি। সম্ভাব্য কারণের মধ্যে প্রথম বিশ্বযুদ্ধ (১৯১৪-১৭), বিশ্বব্যাপী অর্থনৈতিক মন্দা (১৯২৮-৩৩), দ্বিতীয় বিশ্বযুদ্ধ (১৯৩৯-৪৫), ভারত বিভাগ (১৯৪৭), সমবায় শিক্ষার অভাব, সমবায়ের সাথে জড়িতদের অসততা উল্লেখযোগ্য। এছাড়া পল্লী উন্নয়ন তথা দারিদ্র মোচনে আরো কিছু উদ্যোগ নেয়া হয়েছিল যার মধ্যে পল্লী পুনর্গঠন কর্মসূচী, ভি-এইড কর্মসূচী প্রভৃতির উল্লেখ করা যায়। পর্যালোচনায় দেখা যায় যে, এসব কর্মসূচী পল্লী উন্নয়নের ক্ষেত্রে আশানুরুপ অবদান রাখতে সক্ষম হয়নি। অতঃপর ১৯৫৯-৬০ সালে কুমিল্লাস্থ বাংলাদেশ পল্লী উন্নয়ন একাডেমী (বার্ড) প্রতিষ্ঠার মাধ্যমে পল্লী উন্নয়ন তথা দারিদ্র বিমোচনের উপায় নিয়ে গবেষণা কার্যক্রম হাতে নেয়া হয়। বার্ডের গবেষণালব্ধ ফসলই হ'ল 'দ্বি-স্তর সমবায় পদ্ধতি' যা সমন্বিত পল্লী উন্নয়ন কর্মসূচীর (পরবর্তীতে বিআরডিবি) মাধ্যমে সমগ্র দেশে পর্যায়ক্রমে সম্প্রসারিত আকারে বাস্তবায়িত হতে থাকে।

দ্বি-স্তর সমবায়ের গোড়াতে গ্রামের কৃষি, হাঁস-মুরগী ও গবাদী-পশু, মৎস্য, স্বাস্থ্য ও পুষ্টি, পরিবার পরিকল্পনা এবং ক্রীড়া ও বিনোদন প্রভৃতি ক্ষেত্রে সমন্বিতভাবে গ্রামের সম্পদ ও থানা পর্যায়ে সরকারী সম্পদের সদ্ব্যবহারের মাধ্যমে সার্বিক গ্রামোন্নয়নের কথা বলা হয়েছিল। সকল সম্পদ সমিতির মাধ্যমে গ্রামের প্রতিটি পেশায় নিয়োজিত মানুষের কাছে পৌছানো হবে। কিন্তু এ সকল কার্যক্রম এগুতে শুরু করে 'টার্গেট গ্রুপ এ্যাপ্রোচ' নিয়ে। গ্রাম প্রধানতঃ কৃষি ভিত্তিক হওয়ায় প্রথমে গ্রামের কৃষকদের 'টারগেট' করে গ্রাম ভিত্তিক কৃষক সমবায় সমিতি (কে এস এস) এবং থানা পর্যায়ে থানা কেন্দ্রীয় সমবায় সমিতি (টিসিসিএ) গঠন করা হয়। ফলে গ্রামের বৃহত্তর জনগোষ্ঠি রইল সংগঠনের বাইরে। এতে তাদের মধ্যে খানিকটা দূরত্বের সৃষ্টি হলো। কেএসএস গঠনের ফলে কৃষি উৎপাদন বেড়েছে সত্য, কিন্তু গ্রামের সার্বিক উন্নয়ন ঘটেনি। কৃষি উৎপাদন বৃদ্ধির ফলে বড় কৃষকরা লাভবান হলেও ছোট কিংবা মধ্যম কৃষক ক্রমে হয়েছে ভূমিহীন অথবা কৃষি মজুর বা শ্রমিক। বার্ড-এর ল্যাবরেটরী এলাকা কুমিল্লাতে ১৯৬০ সালে ভূমিহীন ছিল ৩০%। বর্তমানে সেখানে এ সংখ্যা প্রায় দ্বিগুণ (৫৮%)। এছাড়া দ্বি-স্তর সমবায়ের ফলে দেশের কৃষি উৎপাদনে ইতিবাচক পরিবর্তন এলেও শিক্ষা, স্বাস্থ্য ও পুষ্টি, পরিবার পরিকল্পনা, গবাদি পশু ও হাঁস-মুরগী পালন প্রভৃতি ক্ষেত্রে আশানুরপ উন্নয়ন ঘটেনি। পরবর্তীতে ধারণা করা হলো যে, কৃষকের উন্নয়ন করে সমাজের সার্বিক উন্নয়ন সম্ভব না। এরুপ অবস্থায় গঠন করা হল সমাজের বিভিন্ন শ্রেণীভিত্তিক সমবায় সংগঠন–মহিলা সমবায় সমিতি, বিত্তহীন পুরুষ ও বিত্তহীন মহিলা সমবায় সমিতি। এছাড়া গ্রামে কাজ করছে সমবায় অধিদপ্তর পরিচালিত সাধারণ সমবায় ও বিভিন্ন বে-সরকারী সংস্থার সংগঠন। ফলে গ্রামে দেখা দিয়েছে সংগঠনের বন্যা। এসব সংগঠনের তৈরী আইন-কানুনের বেড়াজালে গ্রামের নিরক্ষর দরিদ্র

জনগোষ্ঠি দিশেহারা হয়ে পড়েছে। সবার লক্ষ্য এক, কিন্তু সবাই ভিন্ন ভিন্ন পথে অগ্রসর হচ্ছে। ফলে গ্রামবাসীরা দ্বিধাদ্বন্দে ভুগছে। ইতোপূর্বে সরকার গ্রামের উন্নয়নে অনেক প্রচেষ্টা ও কৌশল গ্রহণ করেছে। এসব কর্মসূচী যে ব্যর্থ হয়েছে তা নয়। তবে আরও পরিকল্পিত ও সমন্বিত উপায়ে গ্রামে প্রাপ্ত সম্পদের সর্বোত্তম ব্যবহার করে কীভাবে গ্রামের সর্বাংগীন কল্যাণ করা যায়, তা নিয়ে ষাটের দশকের চিন্তাভাবনার মুল ধারনা ঠিক রেখে বাংলাদেশ পল্লী উন্নয়ন একাডেমী ১৯৭৫ সালে নিজস্ব প্রায়োগিক গবেষণা কর্ম হিসেবে 'টোটাল ভিলেজ ডেভেলপমেন্ট প্রজেক্ট' (টিভিডিপি) হাতে নেয়। ১৯৮৩ সালে এর নতুন নামকরণ করা হয় 'সার্বিক গ্রাম উন্নয়ন কর্মসূচী 'বা Comprehensive Village Development Programme (CVDP)। প্রসংগক্রমে উল্লেখ করা যায় যে, সমবায় আন্দোলনের বিভিন্ন সমস্যা নিরসনকল্পে গঠিত ম্যাকলাগান কমিটি (১৯১৪-১৫) তার সুপারিশমালার একটিতে উল্লেখ করেন "As a good general rule there should be one society to one village and one village to one society"[৫]। এ কমিটি সমিতির ব্যবস্থাপনা পরিচালনা ও তদারকীর সুবিধাজনক দিক বিবেচনা করে সমিতির কার্যকরী এলাকা সীমিত রাখার সুপারিশ রেখেছে। লক্ষ্য করার মত হল এই যে, উক্ত কমিটির সুপারিশ উপেক্ষা করে পঞ্চাশের দশকে ইউনিয়ন বহুমুখী সমবায় সমিতি (ইউসিএমপিএস) গঠিত হয়। ম্যাকলাগান কমিটির সুপারিশের আলোকে সমবায়কে সংগায়িত করা হলে বোধকরি আজ গ্রামে গ্রামে সংগঠনের বন্যা বয়ে যেত না। সমবায় আন্দোলনের ইতিহাস হয়ত ভিন্নরূপে চিত্রায়িত হ'ত। বলা বাহুল্য সার্বিক গ্রাম উন্নয়ন সমবায় সেদিকে ইংগিত দেয়।

'সার্বিক গ্রাম উন্নয়ন' বলতে মানুষের বা সমাজের সর্বদিকের উন্নয়ন বুঝানো হয়েছে। অর্থাৎ শিক্ষা, স্বাস্থ্য ও পুষ্টি, অন্ন, বস্ত্র, রাস্তা-ঘাট, কৃষি ও শিল্প, কর্মসংস্থান, ক্রীড়া ও বিনোদন প্রভৃতি ক্ষেত্রে ভারসাম্যপূর্ণ বা সুষম উন্নয়ন। দ্বি-স্তর সমবায়ের সংগে সার্বিক সমবায়ের মূল পার্থক্য এখানেই- একটি শ্রেণী বা পেশা ভিত্তিক, অন্যটি গ্রাম ভিত্তিক উন্নয়ন প্রচেষ্টা। বস্তুতঃ ষাটের দশকে যে গ্রাম ভিত্তিক সমবায় দর্শনের কথা বলা হয়েছিল, এতকাল পর সে দর্শনকে গ্রহণের কথা বলা হচ্ছে। অর্থাৎ বলা যায়, আবার গোড়া থেকে শুরু করার প্রয়াস নেয়া হয়েছে।

সার্বিক গ্রাম উন্নয়ন কর্মসূচী'র আওতায় সারা দেশব্যাপী ৮টি থানার ৮০টি গ্রামকে অন্তর্ভূক্ত করা হয়েছে। ঢাকা ও চট্টগ্রাম বিভাগের থানা সমূহ হলো কুমিল্লা সদর (কুমিল্লা), বুড়িচং (কুমিল্লা), সিলেট সদর (সিলেট) ও সোনার গাঁ (নারায়নগঞ্জ) এবং

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[৫] Safdar S.A-Development of Co-operatives in Indo-Bangladesh Sub-continent: A Chronology of Events (1875). Dhaka. 1987, p-15.

রাজশাহী ও খুলনা বিভাগের শেরপুর (বগুড়া), সাদুল্যাপুর (গাইবান্ধা), ঝিনাইদহ সদর (ঝিনাইদহ) ও মিরপুর (কুষ্টিয়া)। বাস্তবায়নকারী সংস্থা সমূহ হলো ঢাকা ও চট্টগ্রাম বিভাগের জন্য বাংলাদেশ পল্লী উন্নয়ন একাডেমী, কুমিল্লা এবং রাজশাহী ও খুলনা বিভাগের জন্য পল্লী উন্নয়ন একাডেমী, বগুড়া। চতুর্থ পাঁচশালা পরিকল্পনায় অন্তর্ভূক্ত এ প্রকল্পটি সম্পূর্ণ সরকারী অর্থায়নে বাস্তবায়িত হচ্ছে।

গ্রামে বিদ্যমান বহুমাত্রিক সমস্যাবলী নিরসনকল্পে 'সার্বিক গ্রাম উন্নয়ন কর্মসূচী' শীর্ষক প্রকল্পটি বাস্তবায়ন করা হচ্ছে। এটি একটি পরীক্ষামূলক গবেষণাধর্মী প্রকল্প। এ প্রকল্পের মূলনীতি হলো 'এক গ্রাম, এক সংগঠন'। অর্থাৎ পুরো গ্রামকে একটি মাত্র সমবায় কাঠামোর আওতায় এনে গ্রামবাসীদের সামগ্রিক উন্নয়ন করা। এ সমবায় সংগঠনটির আনুষ্ঠানিক নাম হলো 'সার্বিক গ্রাম উন্নয়ন সমরায় সমিতি লিঃ'। সমবায় আইন-১৯৮৪ ও সমবায় নিয়মাবলী-১৯৮৭ অনুসারে এ সংগঠন পরিচালিত হচ্ছে। সমবায় আইন ও বিধির আলোকে প্রণীত একটি 'উপ-বিধি' থাকবে, যা সমিতি পরিচালনার ক্ষেত্রে সংবিধান হিসাবে বিবেচিত হবে। গ্রামে বসবাসরত নারী-পুরুষ, যুবক-যুবা, শিশু-বৃদ্ধ, ধনী-দরিদ্র নির্বিশেষে সকল পেশা ও শ্রেণীর জনগোষ্ঠী সমবায় আইন ও বিধির শর্তাবলী পুরুণ সাপেক্ষে এ সংগঠনের সদস্য হতে পারে ।

সার্বিক গ্রাম উন্নয়ন সমবায় সমিতিকে উৎপাদনমুখী কর্মকান্ডের সহায়ক প্রতিষ্ঠান হিসেবে দাঁড় করানোর মাধ্যমে সমাজের বিভিন্ন স্তরের মানুষের মাঝে সৌহার্দ্য, সম্প্রীতি ও সংহতিস্থাপন সহ অর্থনৈতিক স্বাচ্ছন্দ্যদান করার একটি প্রয়াস এ কর্মসূচীতে রয়েছে। এর ফলে গ্রামের বিভিন্ন দল-উপদলের মধ্যে দুরুত্ব অনেকটা হ্রাস পাবে এবং আনুষ্ঠানিক নেতৃত্বের বিকাশ ঘটবে। এ সমিতিতে সদস্যদের পরিকল্পনা ও সিদ্ধান্ত গ্রহণ প্রক্রিয়ায় অংশ গ্রহণের ব্যাপক সুযোগ রয়েছে। নিজের সমস্যা নিজেরাই চিহ্নিত করে সমাধানের পথ নির্দেশনা তারাই দিবে। কারো মুখাপেক্ষী হয়ে তারা বসে থাকবে না, কেউ কোন খবরদারি করতে আসবে না। এটাই এ কর্মসূচীর মুল চালিকাশক্তি।

পর্যবেক্ষণ ও মন্তব্য

প্রকল্পের বিধান মতে সেসব গ্রামকে কর্মসূচীর আওতায় আনতে হবে যেখানে কোন সংগঠন, বিশেষ করে সমবায় সংগঠন নেই । কিন্ত সরেজমিনে দেখা গেছে যে, সংগঠনমুক্ত গ্রামের অস্তিত্ব খুব কমই আছে। প্রকল্প এলাকার প্রত্যন্ত অঞ্চলে গ্রাম পাওয়া গেলেও সেখানে বে-সরকারী সংস্থার তৎপরতা রয়েছে । গ্রামের অধিকাংশ জনগোষ্ঠী গরীব। দারিদ্রের কারণে ইচ্ছা থাকা সত্বেও অনেকে সঞ্চয় করতে সক্ষম হচ্ছে না। কোন কোন গ্রামে আশাপ্রদ সাড়া পাওয়া যায়নি । অনুসন্ধান করতে গিয়ে জানা যায়, কিছু কিছু বে-সরকারী সংস্থা সমিতি গঠনের নামে সদস্যদের জমাকৃত

সঞ্চয় আমানত নিয়ে প্রতারণা করেছে। তাই গ্রামবাসীরা সন্দেহ করছেন, যেমনটি ঘর পোড়া গরু সিঁদুরে মেঘে ভয় পায়। এরুপ একটি 'চ্যালেঞ্জিং' অবস্থায় এ কর্মসূচী বাস্তবায়নাধীন।

সিভিডিপি একটি সরকারী কর্মসূচী যা বগুড়া ও কুমিল্লা একাডেমীদ্বয় বাস্তবায়ন করছে । এতে গ্রামবাসীদের কল্যাণ নিহিত রয়েছে। সেকথা গৃহিত কার্যক্রমের মাধ্যমে গ্রামবাসীদের বোঝানো সম্ভব হয়েছে। ফলে গ্রামে জনগণের মধ্যে যথেষ্ট উৎসাহ পরিলক্ষিত হয়েছে। সংগত কারণ বোধ হয় এও হতে পারে, গ্রামের জনগোষ্ঠির বহুধা বিভক্তির স্থলে একই সংগঠনভূক্ত হওয়ার সুযোগ রয়েছে এ কর্মসূচীতে। তারা ঐক্যের সুর খুঁজে পেয়েছে এখানে। তাই গ্রামের জন, জমি ও জলের সাথে পরিকল্পনা, প্রশিক্ষণ ও সম্পদের এবং সর্বোপরি থানা পর্যায়ের সাপোর্ট-সার্ভিসের সুষ্ঠূ সমন্বয় ঘটিয়ে গ্রামের সার্বিক উন্নয়ন নিশ্চিত করা সম্ভব বলে আশা করা যায়। এ প্রকল্পের ফলাফল ইতিবাচকও হতে পারে, নেতিবাচকও। সার্বিক গ্রাম উন্নয়ন কর্মসূচী শীর্ষক প্রকল্পটি শেষ হলে অন্ততঃ এর প্রায়োগিক সম্ভাবনা সম্পর্কে উপযুক্ত মন্তব্য করা সম্ভব হবে।

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BOOK REVIEW

CAN POTENTIAL CAPACITY OF DEEP TUBEWELLS BE UTILIZED: by W.M.H, Jaim, Human Resource Development Programme, Winrock International, Dhaka, Bangladesh 1993 pp. XXI Plus 136.

SK. ZAHRUL FERDOUS*

The book under review entitled 'CAN POTENTIAL CAPACITY OF DEEP TUBEWELLS BE UTILIZED ' deals with a very important public policy issue. In it, the author has endeavoured to examine the issue of deep tubewell irrigation from technical, management and socio-economic dimensions. The whole book is arranged in eight chapters. The author deserves special appreciation for his efforts to use tables, charts and maps which have definitely enriched the study in terms of both methodology and information generation.

Notwithstanding these strengths, the book suffers from flows in the reliability of information provided and the logic of arrangements of arguments.

In Chapter-1, the author has set the tone of the research work by providing an elaborate introduction which contains: (1) An overview of Irrigation Development in Bangladesh, (2) Irrigation Management in Bangladesh, (3) Performance of DTW in Bangladesh with respect to command area, (4) Explanations for Shortfall of DTW Capacity Utilization, (5) Measures of improving DTW Command Area and (6) Objectives of the Study. It consumes one-third of the book. In lieu of that, more

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focus could have been given to the subject chosen for the research study. In other words, the study should have been kept more confined within the issue of irrigation development of Bogra region keeping relevance with the title mentioned in the page next to the cover page. This precaution would have made the study empirically more feasible and reliable. In this chapter Fig. 1.1. needs further improvement. Tubeweel Command Area Development Project and Irrigation Management Programme were separate projects, but the author has considered them as the same project. The only similarity was that both the projects dealt with the irrigation activities.

Chapter-2 describes about the methodology of the study which includes: (1) selection of sites, (2) sources of data and sampling technique and (3) data collection and analytical techniques used. It seems that the methodology for the study is alright.It would have been better if the views of the concerned researchers who worked at the project sites could have been incorporated.

Chapter-3 highlights the salient features of Bogra region. It is indicated earlier that this chapter could have further been improved by providing additional related information. Under this chapter, climate and soil type (sub-head 3.1.2) could have been elaborated. Just mere citation of maximum and minimum temperature of a year is not enough for the readers. The quoted year of data collection on temperature in the section, that is, 1984-85 has no relevance with the preiod of data collection of the study. Likewise data on the rainfall seemed very scanty. Bogra district has one weather sub-station office. With the

help of this office a very good information on climate could have been presented here. On the otherhand, description about the Soil type could have further improved if the district office of soil Resource Development Institute at Bogra was consulted. Under the same chapter, the Agriculture (sub-head 3.3.3.) is lacked with the information of yield of important crops. Another important information, that is, information on the education facilities could have been incorporated in this chapter as well.

Chapter-4 deals with the nature and extent of DTW utilization in Bangladesh. Although the author himself has raised question about the reliability of the data, still some clarification on the figure on DTW mentioned in page 52 and in the Table 4.2 is required. In this chapter, a number of reasons are mentioned for non-operation of DTWs. These are associated mainly with the technical and organisational problems. However, these problems could have been cross-tabulated with table 4.4. With this cross-tabulation the reasons for non-operation could have been ascertained after their normal operations. Only then one can say with some certainity whether purchase of DTWs will be profitable or not.

Chapter- 5 is the section where the work of RDA on compacted earthen channel has been discussed. Three aspects are compared with the non-compacted channel in this section. These are: (1) increase in the command area, (2) increase in the productivity and (3) change in the cropping pattern and intensity. It is understood that compacted channel has more or less positive results on all those three counts/dimensions although the author has

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posed question on its sustainability. To examine it, chanages between the command area from the first year after compaction of earthen channel and the command area after the 5th/6th year was calculated. This seems a quite long time for calculation of sustainibility. It should not take more than three years to judge the sustainability of a work like it. Moreover, question may be raised whether it is justified to calculate sustainability only by considering the increase/decrease in the command area or other related activities should have been taken into account. Again, though the author mentioned that one of the major aspects of the study was to see whether cropping pattern was changed or not, but one may dismay to see that this has not been given much emphasis. What have been the cropping patterns before and after compacted earthen channel have not been discussed in the chapter. The author has discussed the Chandina and BR-I variety as if they are different. But Chandina and BR-I are not different, it is the same variety. Again, the author has used farmers' nomenclature in case of a variety called 'Kalimbom'. To the members of the Scientific Community, the variety may sound unfamiliar as the author has not mentioned a bit details of it.

In chapter-6 under the title 'Socio-Economic Constraints for Improving the Capacity Utilisation of DTW', the author has identified several problem areas that impede deep tubewell utilisation. But most of them can be overcome when more contacts between the farmers and staff working under various organisations at the farm level can be established. However, it is true that DTWs are not used for cultivation of crops except Boro rice. This is not only applicable in Bogra region, it is true as well for other

parts of Bangladesh. The author has offered several reasons based on the farmers' opinion for the low utilization of DTWs. One of these concerns funding for construction of compacted channel. As a way out, the author rightly indicated various alternatives such as whether a policy decision to include cost of channel construction in total agricultural loan amount advanced to individual/group loanee applicants by BKB, RKB and commercial banks can improve the situation or not. This will help in further boosting agricultural production in the country as the author has found the compacted channel is economically viable (described in the chapter-6 on financial analysis).

The book is a new addition in the field of irrigation. It gives an insight into the subject and indicates directions requiring further research and formulation of policies. The author has rightly pointed out these in the chapter-8. However, the book could be a more readable if some spelling mistakes in various sections were corrected and an extra section to include some definition of terms like cropping intensity, compaction of channel, potential command area could have been provided.