

A STUDY ON DELAY IN IMPLEMENTATION OF DEVELOPMENT PROJECTS

Mir Obaidur Rahman
Md. Idris Ali
Kazi Aminul Islam
Md.Ashraful Maqbul

BANGLADESH PUBLIC ADMINISTRATION TRAINING CENTRE
SAVAR, DHAKA
JUNE 1989

88 JUN

A STUDY ON DELAY IN IMPLEMENTATION OF DEVELOPMENT PROJECTS

Mir Obaidur Rahman
Md. Idris Ali

Assisted by
Kazi Aminul Islam
Md. Ashraful Maqbul

**BANGLADESH PUBLIC ADMINISTRATION TRAINING CENTRE
SAVAR, DHAKA
JUNE 1989**

Acknowledgements

This research study was carried out under close supervision of an evaluation panel consisting of Dr. S. A. Samad, Member, Directing Staff, Bangladesh Public Administration Training Centre (BPATC), Mr. Muhammed Ali, Additional Secretary, Ministry of Establishment and Mr. Abdus Samad, Director General, Implementation, Monitoring and Evaluation Division (IMED). We are indebted to the members of the evaluation panel for their valuable guidance and comments which led to identification of the projects for study, exposure to the reference materials and redesigning of the study report.

We also acknowledge with thanks the valuable contributions made by Mr. Zakir Hossain, Asstt. Director, IMED, Mr. Salauddin Ahmed, Senior Engineer, The Atomic Energy Research Institute, Savar and Mr. Mansur Ahmed, Asstt. Architect, Building Planning and Design Unit of the Ministry of Health by making available to us data, files and documents relating to the projects under study. Finally, we wish to thank Mr. Rahmatullah and Mr. Jagadish Chandra Roy for typing and retyping the draft.

Mir Obaidur Rahman

M. Idris Ali

Table of contents

	<u>Page</u>
Acknowledgement	
Executive Summary	1
Background	2
CHAPTER I	
Scope and Methodology of the study	12
CHAPTER II	
Project Implementation Experience: A Review	19
CHAPTER III	
Case Study I: 19 Upazila Health Complex	27
CHAPTER IV	
Case Study II: Dairy and Cattle Breeding Farm, Faridpur	58
CHAPTER V	
Case Study III: The Atomic Energy Research Institute (AERI), Savar	73
CHAPTER VI	
Synthesis of the Implementation Experience	93
CHAPTER VII	
Suggested Measures	97
Footnotes	100
Bibliography	102
Questionnaire	105

Executive Summary

This study attempts at delineating some of the crucial factors which hinder the implementation process of development projects in Bangladesh. Three projects which were singled out for indepth study are (i) 19 Upazila Health Complex; (ii) Dairy and Cattle Breeding Farm, Faridpur and (iii) Atomic Energy Research Institute at Savar. The project areas thus included agriculture, Health and Science and Technology.

The projects were chosen on purposive sampling basis and representativeness of the projects was ensured through carefully selected norm. Both primary and secondary data were used for analyses. Data were collected from project personnel who were involved in the implementation of the projects. Besides, Administrative Ministries, sponsoring bodies and coordinating agencies were approached for clarification of ideas, opinion and views gathered during the field visit to the project site.

The implementation experience of the three projects suggests both commonality and variation on many aspects. The implementation experience of the three projects are briefly outlined in succession.

19 Upazila Health Complex:

The project 19 Upazila Health Complex was a segregated unit of the 356 Upazila Health Centres initiated under the credit Agreement for the IDA's Second Population and Family Health Project. Besides, fund was also available on grant basis from the government of Australia,

CIDA, Federal Republic of Germany, The Netherlands, NORAD and SIDA. Building, Planning and Design Unit (BPDU) of the Ministry of Health and Family Planning was entrusted with the task of construction and supervision of the project activities and providing for furniture and equipment for the project. The location of 19 Upazila Health Complex were Shibpur (Dhaka), Bhaluka and Tarail (Mymensingh), Alfadanga (Faridpur), Teknaf (Chittagong), Raninagar, Bhagatipara (Rajshahi), Sundargonj and Durgapur (Rangpur), Belkuchi and Tarash (Pabna), Hakimpur and Ranisankhail (Dinajpur), Debhata (Khulna), Mohammadpur (Jessore), Bamoi, Sulla and Bisnanath (Sylhet), Nakhiorchari (CHT).

As the project title indicates, this project consisted of 19 sub-projects. All the items of one sub-project were replicated with slight variation in other sub-projects. But implementation experience at each upazila depict some common features typical of LDCs. At Raninagar, for example, implementation suffered due to non-availability of bricks, at Tarail work was suspended for a long time due to negligence of the contractor, at Belkuchi flood hampered progress, at Tarash alternate site had to be chosen, at Sundargonj there was delay in handing over the site. At Durgapur in Rajshahi, construction of the sub-project was completed in all respects by the target date of March 1984 but supply of furniture was delayed by more than a year. At Shibpur in Dhaka, construction work was completed within a reasonable time of the target date and supply of furniture was over before the target date of completion. But the site could not be handed over due to delay in energising the UHC. Due to delay in providing stable

electric connection, the Alfadanga sub-project could not be completed in all respects before three and a half years after the target date of completion. Construction work at Sulla in Sylhet was completed and Health Complex started functioning there in time; but supply of furniture and equipment was not completed before January, 1986 and May, 1986 respectively.

Appointment of Planning and Design Consultants was the precondition for credit effectiveness of IDA credit. It took ten months to select the consultants and the consultants took two years to complete preconstruction activities. As a result no physical work could be started in the first three years of the project. While the BPDU provided useful focal point of the project implementation efforts, lack of empowerment of the BPDU rendered its role into more of an intermediary than of an arbiter.

The other major problems encountered in the implementation of the project were relating to acquisition of land and site selection, delay in issuance of work orders, difficulty in transportation, delay in delivery of site, provision of electric connection and water supply, etc.

Dairy and Cattle Breeding Farm, Faridpur:

The project, "Dairy and Cattle Breeding Farm" at upazila Nagarkanda, Faridpur was initially conceived as a miniature replication of the Dairy Farm at Savar, Dhaka to achieve the following objectives:

- i) Develop and maintain 100 cross-breed Frisian and local stock for the production of LXF breeding bulls,
- ii) develop the farm as rearing unit for the production of breeding bulls and also for distribution of unused bull calves for draft purpose and heifers to the interested farmers for the purpose of increasing quality animals for more milk and meat production, and
- iii) multiply and distribute seeds and seedling of HYV grasses and fodder crops and imparting of practical training to the farmers about rearing and management of cross-breed animals.

This was an 'A' category project. The total cost of the project to the tune of Tk.2.66 crore was borne by local fund of the government of Bangladesh. The sponsoring agency of the project was Ministry of Fisheries and Livestock and the responsibility of execution, operation and maintenance was entrusted with the Directorate of Livestock Services.

The major problem as observed in implementation of this project was delay in the acquisition of land. The implementation period stretched from 1980/81 to 1984/85. Actual implementation period lagged far behind schedule and the civil work could only be started during 1985/86. The intervening period experienced increase in cost for the construction materials, and for stores and equipment. The project needed to be redesigned for cost escalation and also to accommodate some of the basic items previously not included in the project. The other reasons for delay in the project implementation included faulty design of the

project, delayed release of fund, re-estimation of cost of some of the items and approval of the revised cost from Livestock Department Construction Board.

The Atomic Energy Research Institute

The project originally named "Atomic Energy Research Establishment" was designed mainly for undertaking research and development activities in nuclear science and technology especially for its peaceful use in agriculture, medical science and industry. The site of the project is located at Ganakbari, Savar. The project was to be implemented in two phases over a period of ten years. It was planned that, the period between 1975/76 to 1977/78 would cover phase-I of the project, which in fact took ten years to complete even after the scale of project activities of this phase was drastically reduced.

Smooth implementation suffered heavily owing to over-ambitious design, frequent revision of the project — a concomitant of inadequate allocation of fund in the ADP, lack of manpower skilled in formulation and implementation of project, delays in customs clearance of equipment, delay in fulfilling preconditions for co-operation, e.g., signing of Nuclear Non-proliferation Treaty, etc.

The project is making some contributions in the field of nuclear medicine. The other area that merits mention is food and agriculture in which the project has undertaken some research activity. While some of the facilities remain underdeveloped, the Institute is yet to realise its optimum functional potential.

Background

Developing countries attempt at economic and social development through formulation and implementation of economic plans. Planning is a process which comprises activities ranging from estimation of resources for realization of a targetted growth rate to allocation of resources among the various sectors of the economy. Thus the process includes activities at macro and micro level. The activities at macro level indicate overall direction of the economy within the framework of macro-economic policies for implementation of the plan; interaction of macro variables such as consumption, investment, savings, export and import are determined at this level. At the micro level investment strategies and priorities of individual sectors along with supporting policies are elaborated and projects are identified, prepared and implemented.¹

Projects are the centerpieces of a development plan. Hirschman calls them "privileged particles of the development process"². The imagery Gittinger³ adjuncts to projects is the cutting edge of development — the building blocks of a plan. Objectives of a plan get reflected in the projects, so achievement of planned targets rests heavily on successful and timely completion of projects. Generally, a project passes through a cycle involving different stages including implementation.⁴ Depending on its nature, a project experiences different odds in its implementation phase. The scale and magnitude of such odds may substantially reduce the impact of the project in

development efforts.

Beginning from the stage of identification, a project passes through the stage of preparation, appraisal and approval before it is ultimately ready for implementation. Very often, a project implementation office is entrusted with the responsibility of carrying out the scheduled activities through services, support and delivery which very often depends on establishing and maintaining linkages with various institutions. At each step, the project management faces odds and oddities. An inept project manager may be easily trapped in them. Sometimes problems so crop up that even an experienced and skilled manager may not be able to circumvent them on his own.

Implementation is a time-consuming and phased process. In this process stakeholders' perception of project in terms of anticipated costs and benefits changes due to social, economic and political reasons. A project, viable in a particular political setting, may totally lose its importance in another setting. This puts a downward pressure on the minimum level of commitment required for implementation of a project. "Implementors must know what they are supposed to do in order to be effective"⁵. The chain of causation of interlinking relationship generally surfaces through a cohesive set of policies - the arms of an implementor. A policy can encourage or discourage the project beneficiaries and the private and public bodies and thus accelerate or decelerate the implementation process. In the shadow of economic pluralism and in a pluralist polity, the policy variables

need to accommodate political aspect of policy design. Many nonstatutory variables⁶ such as "socio-economic conditions", "public support", "attitudes and resources of constituency groups", and the leadership skill of implementing officials" are no less important in this milieu. Even, a cohesive and consistent set of policies may not be enough for the implementor.

The implementor needs to be innovative since constraints hidden in the planning stage may only be discovered in the implementation process for which readymade panacea may be a distant possibility. Thus aligning implementation as monitoring of physical resources is banal; implementation may involve adroitness in bargaining, sobriety and compromise among different agents such as politicians, project administrator and project beneficiaries. Priorities and preferences of major stakeholders adrift and in the face of uncertainty and rigidity, implementation may be delayed and in some cases the tolerable limit may be exceeded.

Lessons from experience in project implementation manifest various aspects which hinder the implementation process. Faulty planning and design of the project often necessitate redesigning of the project at the middle of implementation which results in cost and time overruns. Human factor is no less important. "Implementation is really something of a 'game' in a psychological sense. A game implies not only an overall framework of rules within which it is played but also a certain amount of manoeuvring, rivalry, bargaining and compromising among

the players"⁷. A project manager who lacks the knowledge and skill in resource management, decision-making, problem solving and inter-agency coordination may end up in a mess⁸. Implementation environment which catalogues procedural aspects such as utilization of project money, employment of project personnel, floatation of tender and procurement of machinery and equipment by the project manager may hamper smooth implementation process. Inadequate institutional capability may pose problems in charting the coordination required at various stages among the different stakeholders of the projects. Dennis A. Rondinelli⁹ provides a checklist of problems which in one way or another, inhibit the implementation process. The list includes faulty appraisal and selection processes, defective project design, inadequate project execution, operation and supervision.

Implementation, Monitoring and Evaluation Division (IMED) identified about 50 areas for delay in project implementation in Bangladesh. The following table identifies some of the major problem areas for a representative set of projects.

Table: Identification of Problem Areas

Problem Areas	Number of Projects Affected				Weighted Percentage
	1982/83	1983/84	1984/85	1985/86	
Delay in approval of projects	49	56	-	52	21
Insufficient allocation	51	78	141	41	32
Delay in land acquisition	21	59	35	26	16
Delay in release of fund	10	38	27	31	12
Delay in lining up of project aid	5	33	15	14	6
Delay in tendering and fulfilment of import formalities	6	54	48	27	13

Source: IMED, Annual Report 1982/83, 1983/84, 1984/85, 1985/86.

A study of implementation experience of a few projects with diverse characteristics may unfold issues typical of project implementation. From this perspective, we would like to systematically study a few projects from beginning to end, explain - from the practitioner's point of view - every step of the process and explore the issues that emerge in a typical project and find ways in which such issues could be so addressed that the project can be implemented

keeping within the bounds of time and resources. To be specific, we aim at finding ways and means for harmonising, mobilising and utilizing resources for timely completion of development projects.

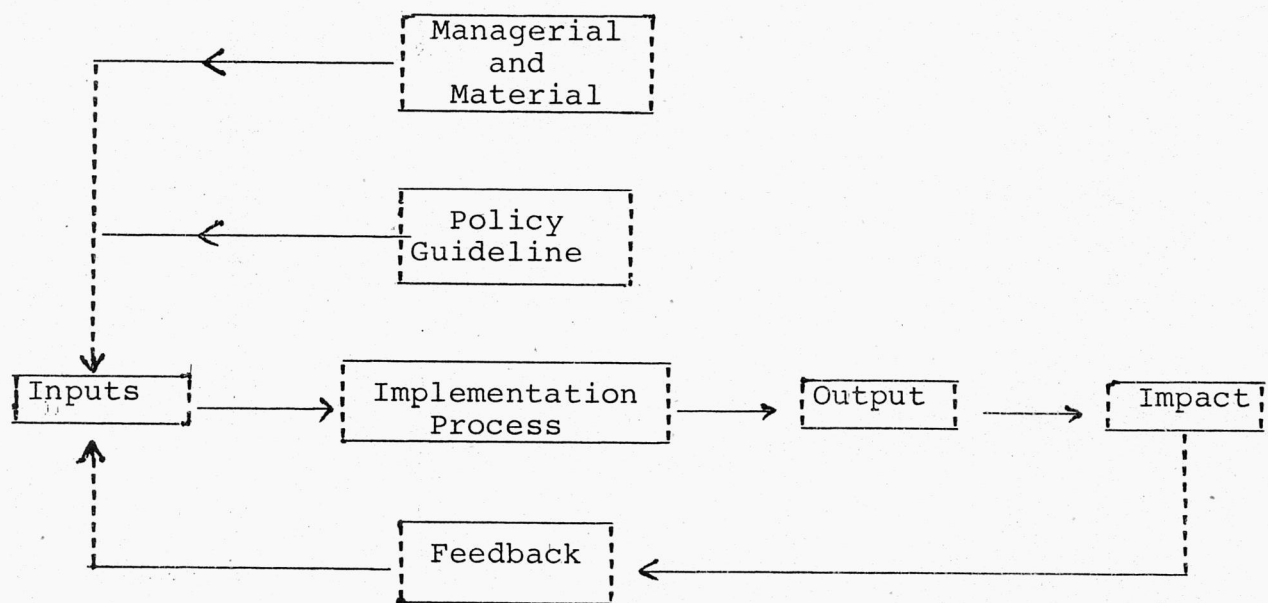
Plan of presentation: This report is divided into seven chapters. Chapter I discusses the scope and methodology of the study. Chapter II intones the morphology of project experience in Bangladesh in a historical perspective. Chapters III, IV and V attempt at elaboration of the implementation experience of the selected projects - 19 Upazila Health Complex, Dairy and Cattle Breeding Farm at Faridpur and Atomic Energy Research Centre, Savar- in succession. Chapter VI attempts at synthesising the implementation experience, the aberration and commonness in different cases and the magnitude of complexity in various project environments. Chapter VII provides an executive summary of the report and lists important policy issues for effective project implementation.

Chapter I

Scope and Methodology of the Study

Scope of the Study

A project is a confluence of related set of activities arranged in a temporal order and designed for attaining explicit objectives. It has a "beginning, a life, and an end. Thus, it is born, it develops, and it dies"¹⁰. The process commences right at the stage of identification of project and continues through the phase of implementation. Resources both managerial and material are warranted as inputs for implementation of a project and they are transformed into output in terms of the benefits project yields. Implementation thus follows a structured path which may be visualised through a model presented below.



Systems Model For a Project

An effective monitoring device may finetune the lapses and delays in implementation of a project. A network plan which lists project activities sequentially may work as a safety valve for a project manager who can exact in advance the progress expected in the project over period (quarter/month) during implementation. Thus project implementation is an art perfected through experience and skill. The implementation episode varies from project to project. Each project has its own peculiarities and aberrations.

This study proposes to examine the issues pertaining to delay in implementation of development projects. The following issues would be considered.

- What are the bottlenecks that cause delay ? Is it due to structural rigidity, institutional inadequacy and inhibitions or because of deficient regulatory mechanism or inefficiencies inherent in bureaucratic system ?
- What are the policies/measures that help/hinder proper implementation ?
- What explains different degrees of success in implementation ?

Thus the objectives of the study are to

1. Identify nature and causes of delay in implementation of development projects.
 2. Synthesise the implementation experience of the projects under study.
 3. Propose remedial measures to minimise delay.
-

Methodology

(i) Project Selection Criteria

Project Selection was preliminarily attempted through the use of IMED's Annual Report. Investigators were asked to enlist from among different sectors of the economy a few projects which experienced problems in implementation. Information were collected on 20 projects for consideration of indepth study. Among the 20 projects information, on seven projects with cost and time overrun, is furnished in Table I.1.

Table I.1 : Projects with Problems in Implementation

Project	(Taka in Crore)					
	Cost Overrun		Time Overrun		Col 2	Col 4
	Original	Actual	Original scheme	Revised scheme	as % Col 1	as % Col 3
	1	2	3	4		
Dhaka Chittagong Highway, Feni by pass	09.22	21.09	82-84	82-86	128	200
Fisheries Research Institute, Mymensing	05.79	10.37	76-80	76-88	179	300
Atomic Energy Research Centre, Savar	03.51	54.06	75-78	77-88	1540	300
Wheat Research Institute	0.33	22.26	75-80	75-90	6745	300
Barisal Patuakhali Highway	03.38	14.13	68-74	68-87	418	317
Dairy and Cattle Breeding Farm, Faridpur	01.84	2.66	80-85	80-87	145	140
19 Upazila Health Complex	24.30	43.08	79-84	79-87	177	160

Source: IMED Annual Report 1984/85, 1985/86, 1986/87

For selection of a representative set of projects within the time and resource constraints, we specifically considered

- i) the mode of financing e.g. GOB financed vis-a-vis donor financed,
- ii) sector specificity and
- iii) suitability of projects in terms of access to data/information.

A total of three projects from the following programme areas were considered for indepth study. The names of the projects sector wise as well as the selection norms are outlined below:

Programme Area/Project

Selection Norm

Agriculture, Livestock:

Dairy and Cattle Breeding
Farm, Faridpur.

GOB funded project,
substantial time but
little cost overrun.

Science and Technology:

Atomic Energy Research Institute,
Savar, Dhaka.

Partly donor assisted,
substantial time and
cost overrun.

Health:

Health Complex at 19
Upazila.

Multidonor such as IDA,
SIDA and Government of
Australia assisted project.
Also partially supported
by GOB and spread geographi-
cally unlike the two other projects.

The projects thus chosen for study were on purposive sampling basis. However, representativeness of the projects was ensured through the above selection criteria.

(ii) Sources of Information

The data comprise both primary and secondary sources. The following techniques were used for collection of primary data.

- a) Project Manager, Project Administrators and other concerned officials were interviewed through a structured questionnaire.
- b) Administrative Ministries, Sponsoring and other co-ordinating agencies were approached through unstructured questionnaire delving mainly into policy level and systemic issues.

The secondary sources included project proforma, feasibility studies, project monitoring records by IMED, completion reports by both donor agencies as well as project implementation unit and other useful literature.

Overview of Case Presentation

It is pertinent at this stage to put succinctly the essential elements to be included in the case study. We tried to present here the broad features that comprise case presentation. A check-list of the various elements may be a good starting.

i) Project Digest: An executive summary of the projects delineating the project objective, the goals, and the financing pattern of the project.

ii) Financial Phasing: Yearwise planned financial outlay against actual expenditure for the project in the ADP would be tabulated.

This would facilitate highlighting of the consequences of delay in implementation.

iii) Procedure Guide: It is an outline of the procedural norms and issues adopted during implementation of the project. This would explicitly show the linkage of the project implementation office with the major stakeholders of the project i.e., the Administrative Ministries, the Planning Commission or any other agencies e.g. the Public Works Department (PWD) - responsible for any of the project activities. The financial power and administrative authority of the Project Director in such matters as hiring of staff, travel routines, fungibility in resource use etc. would come within the purview of the procedure. A description and an analysis of the effectiveness of the information and efficacy of control system of project monitoring and the role of project manager in crisis management, in case a project implementation exercise warrants such ingenuity, will also be considered.

iv) Master Schedule: It loosely connotes implementation schedule; a master schedule lists all activities of a project in a defined time frame. A Master Schedule contains the following:-

- the name of the tasks listed on the work breakdown structure.
- the starting date of each task.
- the expected duration of each task.
- completion date of each task.

v) Implementation Experience: Trace the major factors for delay in the implementation of projects.

Conclusion for each case study would delve into the implementation experience in an integrated mass, incorporating details from murky conjecture to concrete facts and thus rendering a confocal and substantive analysis of the implementation experience. Important policy recommendation thus may be correlated with odds experienced.

Chapter II

Project Implementation Experience: A Review

Bangladesh during her partnership with Pakistan shared planning exercises aiming at economic and social development through a few mid term plans. In 1973, the First Five Year Plan (1973-78) was formulated for reconstruction of the war-torn economy. The performance during the first two years fell short of expectations. After a two years journey it was substituted by a Hard-core plan (1975-78)¹¹. This was succeeded by a Two Year (1978-80) Plan. The Second Five Year Plan (1980-85) and the Third Five Year Plan (1985-90) incorporated inter industry analyses in ensuring consistency in broad production targets and macro modelling for optimal allocation of investible resources among the various sectors of the economy. Both the plans took cognizance of the importance of project profile for attainment of the plan targets and aptly enriched the planning exercise with the document namely "List of Projects".

Annual Development Programme (ADP) is the public sector development budget through which funds are allocated for various projects. Since 1980, the programming exercise carried out for inclusion of projects in the ADP underwent several modifications. The inclusion of unapproved projects in the ADP during the First Five Year Plan resulted in the thin spreading of resources among too many projects. As a result the projects had insufficient allocation which has added to time overrun and created a gap between the number of projects planned

for completion and those actually completed. During the Two Year Plan period, 116 and 359 projects were completed against a target of 261 and 512 respectively for the period 1978/79 and 1979/80. Numerous projects continued to be there till 1981/82 and a thorough review was made in the second year of the Second Plan of all the projects appearing in the ADP to identify the high priority projects and to relieve the ADP of the burden of the non-priority ones. The cost rationalisation exercise and restructuring of ADP during 1982/83 resulted in the dropping of about 500 projects from the ADP of 1981/82. The number of projects in the ADPs declined from 1675 in 1981/82 to 1178 in 1982/83¹². The cost rationalisation exercise of 1982/83 categorized projects into high priority core and non-core. Core Projects were intended for uninterrupted implementation by committing adequate resources even when there occurred shortage of fund. The yearwise reduction in the number of projects from the ADP allowed higher resource allocation to projects of high national priority. This period witnessed an acceleration in the pace of implementation of the projects. While in 1980/81 the number of completed projects was 160, in 1984/85 it rose to 323. In 1980/81 only 11% of the projects in ADP were completed; in 1984/85, the project completion performance registered a rate of 34%, an indication of improvement in project management capability¹³. Table II.1 describes the total number of projects included in the various ADPs and yearwise completed projects against the target set for each year.

Table II.1: Statement of Project in ADP Planned and Completed During 1973/74 - 1987/88

Year	Projects included in ADP	Projects Planned for Completion	Projects Actually Completed
First Five Year Plan			
1973/74	1385	10	3
1974/75	1352	21	12
1975/76	1359	55	41
1976/77	1477	175	85
1977/78	1519	391	145
Two Year Plan			
1978/79	1475	261	116
1979/80	1406	512	359
Second Five Year Plan			
1980/81	1520	321	160
1981/82	1675	228	133
1982/83	1178	192	176
1983/84	992	NA	245
1984/85	938	288	^a 248
Third Five Year Plan			
1985/86	816	112	78
1986/87	787	116	74
1987/88	828	90	61

Note :

- a : Planning Commission quote the figure as 323
- Source: Skylark Chadha, Management of Industrial Projects in Bangladesh, p.128.
- Planning Commission, The Second Five Year Plan (1980-85) p.121.
- : Planning Commission: The Third Five Year Plan (1985-90) p. 28.
- IMED, Annual Report, 1984/85, 1985/86, 1986/87.

Improvement in the project management performance may be attributed to various factors. The liberalisation in the fund release procedure paved the way for fund utilization by administrative ministries/agencies. The new rules empowered administrative ministries in the release of fund for execution of schemes by autonomous/semi-autonomous agencies in four equal instalments for approved aided projects and for non-aided projects, in six-equal instalments subject to any adjustment in the revised budget and certain other minor conditions¹⁴. The on-going projects which exceed the approved cost is treated as unapproved projects and funds of each installment can be released only with prior concurrence of the Planning Commission and Finance Division. The fund release procedure has been further liberalised. The procedure prescribed for release of fund for the year 1988/89 allows for approved projects to release the entire GOB fund allocation for the year in one instalment barring Custom Duty and Sales Tax (CDST).

In 1979 a detailed procedure was laid down for utilization of Reimbursable Project Aid (RPA)¹⁵. For the first two quarters, RPA was released upto 50 percent on quarterly basis for newly aided projects. Release of the 3rd quarter for the newly aided projects and for the 1st quarter for the on-going projects was dependant on submission of claims to the donors regarding earlier releases.

In view of the difficulties experienced in the realization of DSL and unspent balance lying unused with the executing agencies under

the existing fund release procedure changes were introduced in these areas of fund administration in 1980/81. Provisions were made to realize Debt Services Liabilities (DSL) in four equal instalments by deduction at the time of release of funds, if not already made. Unspent balance of the preceeding year was also required to be adjusted/short released. Besides, for timely clearance of goods, Customs Duty and Sales Tax (CDST) was earmarked in the ADP which was not allowed to be used for any other purpose¹⁶.

With a view to streamlining utilization of RPA, some of the donor agencies, such as IDA, CIDA, IFAD, agreed to place a portion of the RPA as advance to be deposited in foreign currency with an account called Special Account in Foreign Exchange (SAFE). The account is maintained in Bangladesh Bank and every year on the basis of authorization issued by the Finance Division, funds are transferred from the account of Bangladesh Bank to the account of the project executing agencies maintained in commercial banks. SAFE funds can be spent by the project executing agencies to meet expenditure on eligible items of the projects. After incurring expenditure, reimbursement is claimed from the donor agencies and the reimbursement thus received is deposited to the SAFE. For projects which enjoy SAFE facilities, allotment/release of RPA cannot be made without the prior concurrence of the Finance Division.

Table II.2 gives a comparative picture of the fund allocated for ADP vis-a-vis actual expenditure over the period 1973-87. This table indicates that despite numerous leverages and flexibility, the actual expenditure always leaves a margin, save for the year 1980/81 and 1986/87.

Table II.2: Comparative Picture of Allocated Fund vis-a-vis Actual Expenditure 1973/74 - 1987/88.

Year	Allocation			Expenditure		
	Total	L.C.	P.A.	Total	L.C.	P.A.
1973/74	464	NA	NA	400 (86)	NA	NA
1974/75	525	NA	NA	500 (95)	NA	NA
1975/76	950	756	194	810 (85)	649 (86)	161 (83)
1976/77	1006	755	251	999 (99)	810 (100)	189 (75)
1977/78	1203	816	387	1267 (105)	749 (92)	368 (100)
1978/79	1603	1079	524	1483 (92)	1077 (99)	406 (77)
1979/80	2330	1568	762	2082 (89)	1492 (95)	590 (77)
1980/81	2369	1569	800	2364 (99)	1633 (104)	731 (91)
1981/82	2715	1715	1000	2391 (88)	1614 (94)	777 (78)
1982/83	3126	1812	1314	2688 (86)	1657 (91)	1031 (78)
1983/84	3585	1932	1653	3006 (84)	1905 (91)	1101 (67)
1984/85	3498	1933	1565	3167 (91)	1875 (97)	1292 (83)
1985/86	4096	1912	2184	3428 (84)	1682 (88)	1746 (80)
1986/87	4573	2025	2488	4439 (98)	1998 (99)	2441 (98)
1987/88	4651	2007	2644	4150 (89)	2015 (100)	2135 (81)

Figures in parentheses indicate percentage of total allocation.

Source : IMED, Annual Report, 1985/86, 1986/87, 1987/88

Planning Commission, Economic Review, 1978/79, 1979/80.

NA not available.

The amount of unutilized fund was Tk.324 crore in 1981/82, Tk.438 crore in 1982/83, Tk.579 crore in 1983/84, Tk.331 crore in 1984/85 and Tk.668 crore in 1985/86. Although over the years local currency expenditure appears to be satisfactory, the project aid component of expenditure shows erratic variation. The disbursement-to-commitment ratio for project aid during the period 1971-1986 is estimated to be 57.2 percent¹⁷. Even the actual expenditure pattern encompasses emerging gap between allocation and utilization of project funds during the period 1981-86. This swells the pipeline. In the year 1983/84 only 67 percent of ADP allocation of the project aid was utilized. The project aid pipeline grew at a compound average annual rate exceeding 27 percent during 1971-1986, and stood at more than \$ 4000 million in undisbursed funds from the foreign aid commitments.¹⁸ The major reason for this swelling is the increase in the share of project aid from 40% to 50% from the First Five Year Plan to the Third Five Year Plan. Commitment of commodity aid has progressively declined from 36% to 25%¹⁹.

Non-utilization of resources results in shrinking of employment opportunities, income and future benefits. The time and cost overruns also reduce the "switching value"²⁰ of the projects. Needless to mention that the time and cost overruns may put even a viable project to the domain of negative present worth, and thus leave little room for flexibility. Fund utilization experience suggests that the economy may improve its absorptive capacity at a faster rate. And this has to conform at least to the rate at which resources are made available for

implementing development projects.

From the experience of project implementation during the beginning of the First Five Year Plan, it was felt necessary to create an institution for ensuring timely and effective implementation of the programmes and projects. A new institution was born in February, 1975, known as Project Implementation Bureau (PIB). It was entrusted with the task of a central monitoring agency. The major function of the Bureau included collection and compilation of data for preparation of monthly, annual and periodic reports, rendering advisory or consultancy services to Ministries/Agencies and submission of inspection reports to the Head of the Government and the Ministries highlighting the problems and suggesting remedial measures, where necessary. The agency was subsequently assigned with the task of ex-post evaluation of projects and was renamed the Implementation, Monitoring and Evaluation (IMED).

In Bangladesh, Project implementation experience illustrates issues which have both external and internal ramifications. The internal perspective incorporates factors such as ambitious plan targets, lack of discipline and of incoherent macro-economic policies, political or other considerations in identification and inclusion of projects in the ADP, inadequate preparatory work on projects and procedural and administrative delays. External issues mainly concentrate on fluctuations in the prices of tradeables, world commodity crises and donor's intransigence in the disbursement of project aid in the face of non-compliance of covenant by recipients. A study on implementation experience of 23 projects unfolds the magnitude of complicity and variation in project management skills required in dealing with the oddities²¹.

Chapter III

Case Study: 19 Upazila Health Complex

Project Digest:

In consideration of unequal distribution of health facilities between the rural and urban areas of the country, the government of Bangladesh decided in 1973 to set up 356 - Thana Health Centres (THC). The government adopted a comprehensive population policy in June, 1976 reflecting high priority to population control programmes as an integral part of the development process. As a prelude to Second Population and Family Health Project, International Development Association (IDA) conducted a Staff Appraisal Mission in 1978. One of the objectives of the project was to reduce fertility and mortality by 'primarily extending and strengthening family planning service and health care delivery system' (1)

During the implementation of the project meant for setting up 356 - Thana Health Centres, Credit Agreement for the IDA's Second Population and Family Health Project was signed. Construction along with furnishing and equipping of 19 Thana Health Complexes was segregated as a separate project to provide 'necessary flexibility in respect of itemwise cost of the scheme' and also to ensure further emphasis for expeditious completion of the work concerned'. Furthermore, IDA insisted that THC's should be constructed, furnished and equipped under the supervision of the Building, Planning and Design Unit (BPDU) of the Ministry of Health and Family Planning which had been created under the First Population and Family Health Project also financed by IDA. When

(1) Staff Appraisal Report prepared by the IDA appraisal mission on Second Population and Family Health Project. The mission visited Bangladesh from April 4 to May 5, 1978.

completed, each UHC established under the project would have a 31 bed hospital along with a family planning clinic serving about two hundred thousand people.

The location of 19 Thana Health Complexes were Shibpur (Dhaka), Bhaluka and Tarail (Mymensingh), Alfadanga (Faridpur), Teknaf (Chittagong), Raninagar, Bhagati-para (Rajshahi), Sundergonj and Durgapur (Rangpur), Belkuchi and Tarash (Pabna), Hakim-pur and Ranisankhail (Dinajpur), Debhata (Khulna) and Mohammadpur (Jessore). The originally selected sites at Kaliyazhuri in Mymensingh and Fulcharighat in Rangpur were substituted by Tarail and Durgapur as they did not conform to world Bank site selection criteria.

Although an expenditure of Tk.22.20 crore was incurred upto June 1984, the project was much behind schedule and the allocated fund was exhausted. To accommodate cost and time overruns, the project was revised in 1986 and completed in all respects in June 1987. The components along with the cost estimates of 19 UHCs is given in table III.1.

Table III.1: Cost Estimate of 19 UHC s

(in crore taka)			
	<u>Local</u>	<u>F.E.</u>	<u>Total</u>
a) Cost of land	0.37	-	0.37
b) Works & acquisition	31.56	-	31.56
c) Tools & plant	-	3.38	3.38
d) T & P foreign (locally purchase)	0.53	-	0.53
e) T & P (Local)	0.55	-	0.55
f) Furniture	0.86	-	0.86
g) Installation & carriage	0.17	-	0.17
h) C.D.S.T.	3.75	-	3.75
i) Consultation cost	1.04	0.49	1.53
j) Repair & maintenance of 1st project building.	0.38	-	0.38
TOTAL TK.	39.21	3.87	43.08

Revised approved cost estimate of the project was Tk.45.08 crore against which total expenditure of Tk.40.48 was actually incurred.

Financing of the project

The project was financed under the 'Second Population and Family Health Project', an umbrella project of IDA which comprised the following components.

- a. Healthcare and National Child Health (NCH) / Family Planning Service Delivery.
- b. Training of Health and Family Planning Manpower.
- c. Information, Education and Motivation.
- d. Research and Evaluation.
- e. Private Sector & Innovative Activities.
- f. Project Implementation.

The total cost of the Second Population Family Health Project including contingencies, local taxes and duties was estimated at US \$ 110 million which included a foreign exchange component of US \$ 36.9 million. The total project cost was to be financed by an IDA credit of US \$ 32 million equivalent, other external financing of about US \$ 67 million equivalent and GOB contribution of US \$ 11 million.

The donor-wise contribution was estimated as under:

<u>Donor</u>	<u>Amount (US \$)</u>	<u>Type of funding</u>
IDA	32.098 million	Credit
Australia	4.040 "	Grant
CIDA	5.024 "	Grant
FRG	18.193 "	Grant
Netherlands	7.935 "	Grant
NORAD	20.010 "	Grant
GOB/SIDA	22.695 "	Grant
<u>Total 109.995 million</u>		

Financial Phasing:

One of the most frequently encountered reasons for delay in implementation of development projects in Bangladesh happens to be the lack of adequate and timely finance. In the present case, lack of finance was not a problem. Table III.2 shows that except in the first year of the project, there had not been a significant shortfall subsequently between the amount of fund released and the amount of expenditure incurred.

Table III.2: ADP Allocation and Actual Expenditure
1979/80 - 1986/87.

(Taka in crore)					
Year	PP allocation	ADP allocation	Actual amount	Date of release	Actual expenditure
1979/80	3.81	1.20	1.20	6/80	0.13
1980/81	4.00	1.40	1.40	9/80	1.40
1981/82	3.00	2.55	1.05	2.82	1.05
1982/83	5.05	9.68	9.58	8/82	9.57
				10/82	
				4/83	
				5/83	
1983/84	8.40	10.48	10.48	9/83	10.04
				10/83	
				1/84	
1984/85		9.30	9.30	8/84	8.40
				5/85	
				6/85	
1985/86		5.00	5.00	8/85	5.00
				9/85	
				6/86	
1986/87	7.15	7.15	5.53	9/86	4.88
Total	43.08	46.76	43.34		40.47

Procedure Guide

Stakeholders of the Project

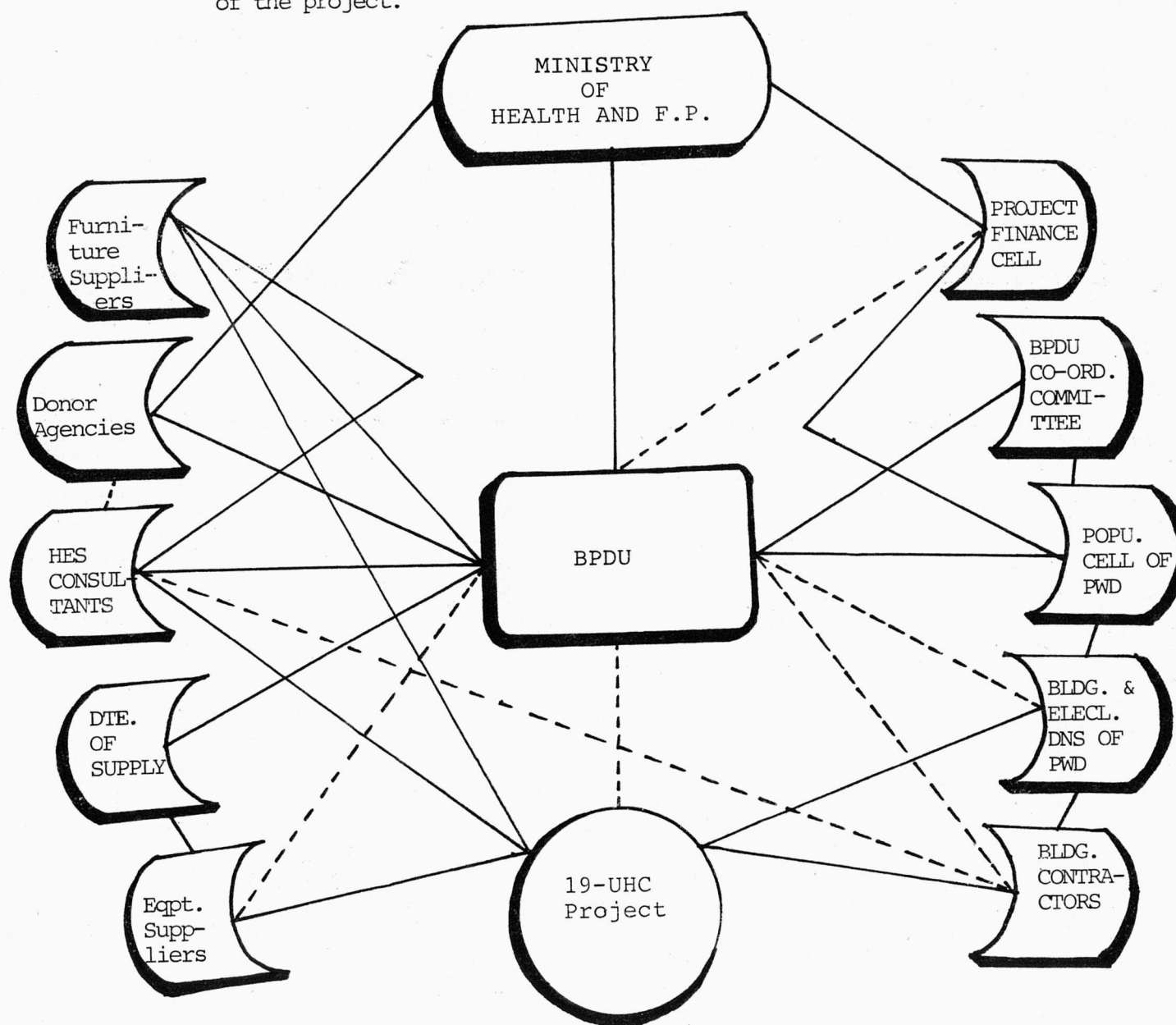
Implementation of the project was accomplished by the coordinated effort of a number of agencies. The following agencies/bodies contributed to the implementation of the project.

1. Government of Bangladesh in the Ministry of Health and Population Control
2. Donor Agencies
3. Building, Planning and Design Unit (BPDU)
4. BPDU Coordination Committee
5. Population Cell of the Public Works Department (PWD)
6. HES, the consultants
7. Project Finance Cell of the MHFP
8. Construction Contractors, furniture and equipment suppliers
9. Power Development Board
10. Directorate of Supply and Inspection

A schematic diagram showing level of interaction among the stakeholders who provided significant inputs towards project implementation is given in table III.3.

Under the terms of the DCA 921 BD, the BPDU engaged HES as the engineering and design consultant. According to the terms of the agreement, the HES was to render the following services towards implementation of the project.

Table III.3: Level of interaction among different agencies involved in implementation of the project.



Legend : Continuous line = Tight coupling
Broken line = Loose coupling

1. Assistance in site selection and site analysis and land acquisition.
2. Land survey and soil investigation.
3. Preparation of plan, design, structural specification for construction of building.
4. Preparation of furniture design and supervision of manufacture of furniture.
5. Topical supervision of project implementation.
6. Preparation of tender documents including estimates of work.
7. Evaluation of bids.
8. Ensure quality of construction of building.

BFDU's Role

Construction, procurement of equipment and furnishing of the 19 - Thana Health Centres was supervised by the Building, Planning and Design Unit (BPDU) of the Ministry of Health and Family Planning. BPDU's functions covered monitoring of civil works and supply of furniture and equipment, preparation of budget, fund release, management of consultants including trouble shooting in the field regarding site problem, supply of materials, progress and quality of work. Thus the continued functioning of a fully effective BPDU was central to the time-bound completion of the THCs. The Project Director with the rank of Superintending Engineer was in the overall charge of the project. He was assisted on the technical side by an Architect and one Executive Engineer. Total number of officers and staff stood at 34.

In spite of the elaborate machinery set up for implementation

of the project, its completion was delayed by three years. Nominally, BPDU was the focal point for implementation of the project. Other agencies working above, below and at its level had frequent interaction with BPDU. But most of the time the BPDU's role was of an intermediary rather than that of an arbiter. The result was that most of the vital questions like price escalation, excess work, recalcitrance of contractors, question of non-supply of materials to the contractors which impeded timely implementation of the project etc. had to be addressed under the usual procedure applicable to similar works executed by the Public Works Department (PWD). If the purpose of creating an exclusive implementing agency for the project was to cut short the procedural tangles, the BPDU's role served the purpose in a very limited way. Although BPDU was created to serve as focal point of the project implementation endeavour, it was not adequately empowered to play that role effectively. Instead of strengthening the BPDU as covenanted in IDA Credit Agreement 921 BD, the unit was downgraded, posts of procurement officer and one Superintending Engineer were abolished by a Committee⁽²⁾. Because of the inadequacy of power of BPDU, the role of the consultants was made largely ineffective. Sometimes, it was apparent that the consultants and the BPDU were unnecessary appendages to the process of decision making rather than catalysts to the process. The tangle of relationship between the major players in implementation of the project is illustrated in Table III.3. It reveals that BPDU's inputs to the project were more indirect than direct.

(2) Martial Law Committee on Organizational Set Up headed by Brig. Enamul Huq Khan.

Work procedure

Work procedures have significant impact on the pace of implementation of a development project. More often than not, roundabout or archaic procedure followed in taking critical decision cause delay in implementation. Any investigation into the causes of delay in implementation of a project will not be complete without giving a close look at the procedures that were followed in implementation of that project.

The project implementation process started with a visit of the consultant to the site finally selected for construction of UHCs. The consultant conducted a survey and soil test of the site. Thereupon they prepared 'Schematic Design Studies' leading to the recommended solution together with general description of the various project items for consideration and approval of the BPDU. BPDU did not approve the 'Schematic design' on its own. The design would be placed before the BPDU coordination and Tender Committee of the office of the Chief Engineer, PWD for consideration and approval. On approval of the schematic design, the Consultants prepared detailed plan, design and estimates. As per requirement of IDA, Civil Work, Sanitary work and Electrical work were included in a single integrated estimate. On the basis of the estimates prepared by the consultants, the Population Cell of PWD floated tenders. The tender documents were sold from different offices of the PWD including the office of Executive Engineer of the concerned Division.

The bids received were handed over to the consultants for evaluation and preparation of comparative statements. The tenders were

finally considered by the BPDU coordination and Tender Committee in the PWD's Chief Engineer's office. The Coordination and Tender Committee was headed by an Additional Chief Engineer of PWD. Superintending Engineer, Population Cell was the member-secretary of the Committee. Project Director, BPDU a representative of the Engineering and Design Consultant and a representative of the World Bank were the other members of the Committee. The engineering and planning consultants acted as adviser on contract of tenders procedure and related documentation. This Committee not only considered tenders but also monitored progress of construction works from time to time and gave decision on various technical problems and problems of general nature which cropped up during implementation. The tenders which were considered most suitable for acceptance alongwith the 2nd and 3rd acceptable tenders were sent to IDA for their concurrence. After obtaining concurrence of the IDA, work order were issued by the respective Executive Engineers to the finally selected tenderer.

Construction work was primarily supervised by the respective Executive Engineers and the Superintending Engineers of PWD. While the civil work part of the contract was supervised by the Executive Engineer of the respective PWD Civil Division the electrical work was supervised by the Executive Engineer of the concerned Electrical/Mechanical Division. The Executive Engineer of the Civil Division made the payment. For the purpose of payment for electrical work, certification of the Electric Division was required. Consultants were

required to visit each site at an average of two times and not less than once per quarter to monitor progress and quantity of work. The consultants submitted a report on each visit to BPDU alongwith a photograph of the site showing the progress. Running bills of the construction contractor were paid by the respective Executive Engineers. The engineering and design consultants and the BPDU did not apparently have a role in allowing payment to the contractors.

Whenever a problem occurred relating to design, layout, quantity of work, price escalation or any other matter, the BPDU would not directly intervene to solve the problem. The problems were usually referred to the BPDU by the executive engineer concerned. The BPDU in its turn, would refer the matter to the Consultants for their opinion. On receipt of the consultants opinion, the BPDU rarely did give a solution of its own to the problems. More often than not, the problem would be referred to the BPDU coordination and Tender Committee for a final decision in the matter.

In the matter of supply of furniture, the BPDU played a more direct role. Tenders were floated by BPDU. The bids were evaluated with the help of the consultants and the final decision about accepting a tender was taken by the BPDU. The Consultants were required to provide full time supervision of manufacture of furniture. Procurement of equipment was, however, done by the Directorate of Supply and Inspection on the basis of indents given by the BPDU.

Master Schedule:

Establishment of 19-Upazila Health Complex Project, in effect consisted of 19 sub-projects. All the items of work in one project replicated with slight local variations in other sub-projects. The UHC project implementation period initially stretched from 1979/80 to 1983/84. A review of implementation experience unfold that by June 1984 only four of the nineteen health complexes were completed. Table III.4 gives a comparative statement of the different time schedules relevant for project implementation.

Table III.4: Statement of Commencement and Completion of Construction of sub-projects

Sl.No.	Sub-Project site	Target date of start	Date of actual start	Target date of completion	Date of actual compl.	Reason for delay
1.	Raninagar:	10/82	10/82	10/83	06/84	Progress hampered due to non-availability of bricks.
2.	Alfadanga:	04/82	03/82	04/83	11/86	Electric connection delayed due to delay in installation of transformer.
3.	Tarail	08/82	10/82	08/83	12/85	Work was suspended for a long time due to negligence of contractor.
4.	Bagatipara:	11/83	12/83	02/85	11/85	Alternate site had to be acquired.
5.	Belkuchi:	02/83	02/83	05/84	05/85	Flood hampered progress.
6.	Mohammadpur:	07/82	10/82	10/83	03/85	Delay in installation of transformer.
7.	Durgapur:	12/82	12/82	03/84	03/84	No delay.
8.	Debhatta:	05/82	05/82	05/82	02/84	Delay in providing power connection.
9.	Shibpur:	08/82	09/82	11/83	03/84	Delay in providing electric connection.

Contd.... Table III.4

Sl.No	Sub-project site	Target date of start	Date of actual start	Target date of completion	Date of actual compl.	Reason for delay
10.	Tarash:	05/84	04/84	05/85	11/86	Alternate site need to be chosen work suspended due to flood.
11.	Teknaf:	09/82	08/82	09/82	11/86	Delay in providing electric connection and external water supply.
12.	Hakimpur:	01/83	08/83	04/84	10/86	Delay in providing electric connection.
13.	Ranisankail	01/83	01/83	04/84	10/85	External electric connection delayed for want of transformer.
14.	Bisawnath:	12/82	02/83	03/84	10/85	Non issuance of building materials.
15.	Bhaluka:	01/83	01/83	04/84	06/85	PDB connection delayed.
16.	Sundergonj:	12/82	04/83	03/84	02/86	Delay in handing over the site. Delayed electric connections by PDB.
17.	Nakhionchari:	07/83	09/83	10/84	02/87	Water supply system could not be commissioned without substantial unanticipated work.
18.	Sulla:	01/83	01/83	04/84	05/85	Site development completed in March '83. No electric connection provided till completion of the project.
19.	Lakhi/Baomi:	12/83	12/83	12/84	10/86	Negligence of contractor and local objection on site selection.

Implementation experience at 19 sites varied widely from one another. At Durgapur in Rajshahi, construction of the sub-project was completed in all respects by the target date of March 1984. But supply of furniture was delayed by more than a year (Table IV). At Shibpur in Dhaka, construction work was completed within a reasonable time of the target date and supply of furniture was over before the target date of completion. Construction work was to be completed by November, 1983 and actually completed in July 1983. But the site could not be handed over due to delay in energizing the UHC. A proposed visit to the site by the President (but not materialized) was, perhaps, a determining factor in timely completion of construction. But construction of the Alfadanga sub-project could not be completed in all respect before three and a half years elapsed after the target date of completion. Furniture supply was completed in October 1984, thanks to the visit to the site by the President of the country on September 9, 1984, while completion of electrical work took another two years. Similarly, delay occurred at Teknaf in Chittagong, and Nakhionchari in CHT. Construction work at Sulla in Sylhet was completed and Health Complex started functioning there in May 1985. But supply of furniture and equipment was not completed before January, 1986 (Table III.5) and May 86 respectively. X-ray unit and other electrical equipment could not be put to use there till the completion of the project due to non-availability of PDB main line near the site.

Table III.5: Supply of Furniture

Sl.No.	Sites	Date of completion of civil work	Number Date of order	Target date of Supply Actual date of Supply
1.	UHC-Debhatta	02/84	No.370 1/84	05/84 06/84
2.	" Alfadanga	11/86	No.342 1/84	05/84 10/84
3.	" Durgapur	03/84	No.356 1/84	05/84 07/85
4.	" Shibpur	03/84	No.327 1/84	05/84 03/84
5.	" Bhaluka	06/85	No.766 2/84	06/84 08/84
6.	" Mohammadpur	03/85	No.781 2/84	06/84 03/85
7.	" Raninagar	06/84	No.1098 2/84	06/84 10/84
8.	" Teknaf	11/86	No.3831 5/84	09/84 08/85
9.	" Hakimpur	10/86	No.679 8/85	12/85 01/86
10.	" Bhagatipara	11/85	No.619 8/85	12/85 12/85
11.	" Belkuchi	05/85	No.634 8/85	12/85 12/85
12.	" Biswanath	10/85	No.664 8/85	12/85 12/85
13.	" Ranisankail	10/85	No.640 8/85	12/85 12/85
14.	" Sundergonj	01/86	No.1414 9/85	01/86 12/85
15.	" Tarail	12/85	No.2078 10/85	02/86 12/85
16.	" Nakhionchari	05/87	No.2063 10/85	02/86 03/86
17.	" Sullah	08/85	No.2048 10/85	02/86 01/86
18.	" Tarash	11/86	No.4853 2/86	06/86 08/86
19.	" Bomoi/Lakhi	10/86	No.4838 2/86	06/86 09/86

Project Monitoring Tools

BPDU Coordination and Tender Committee of the office of the Chief Engineer, PWD was the apex body that gave general direction of implementation of the project and monitored its progress. This committee generally met once a month. The committee reviewed progress reports from the consultants, set tasks and time frame for the contractors, supervising engineers and consultants. It considered different problems that cropped up in the implementation process and gave decisions on issues like price escalation, claims of the contractors, requiring a contractor to procure his own materials or allowing additional work not covered by tender schedule, etc. While considering problems relating to a sub-project, the concerned Superintending Engineer and the Executive Engineer were invited to attend the meetings. This proved to be a useful forum for sorting out implementation bottlenecks.

At the initial stage of project implementation, the consultants prepared an integrated work programme represented in a Bar Chart (Table III.6). In the Bar-Chart 15 months from the date of issue of work order was allowed for completion of the project in all respects where two storied THCs were constructed. For the one storied UHCs, 12 months were allowed. For the purpose of preparing the bar-chart the entire construction works were divided into 18 components and each component had fixed starting and closing points.

The bar-chart reflected a rather simplistic approach of project management. It did not identify criticality of the components or their earliest and latest admissible starting and closing points. The bar-chart did not take into consideration other important factors of project implementation like preparation of plans, designs, estimates, tender documents etc. Nor did it take into account procurement and supply of furniture. It covered only a segment, though a vital one, of project implementation.

Table III.6: Integrated Work Programme of Civil, Sanitary, Water Supply and Electrical Works of Sub-Project Under Second Population and Family Health Project.
(U.H.C. component)

17 November, 1982.

Item No.	Main items	Date of issue of work-order																			
		Time in months for Two storey THCs.										Time in months for single storey THCs									
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1.	Mobilisation																				
2.	Civil works																				
a.	All Buildings																				
i.	Structural work																				
ii.	Door, frames, doors & windows manuf. & fixing																				
iii.	Grills, gates etc. manuf & fixing																				
iv.	Floor and mosaic																				
v.	Painting colour & white wash etc																				
vi.	Plinth Protection																				
b.	Boundary wall and gate																				
3.	Site Development & road.																				
4.	Sanitary & Plumbing works.																				
a.	Internal																				
b.	External																				
5.	Deep Tubewell																				
a.	Test boring																				
b.	Approval of results by PWD																				
c.	Final sinking.																				
6.	Electrical																				
a.	Internal																				
b.	External																				
c.	P.D.B. Connection																				
7.	Clearance of site and handing over.																				

Building Schedule

U.H.C.

1. Hospital Building -	-	16,000 sqft.
2. Class-I - 4 x 750	-	3,000
3. Class-III - 8 x 550	-	4,400
4. Class-IV - 4 x 400	-	1,600
5. Nurses Dormitory	-	400
		<u>26,280 sqft.</u>

Factors delaying implementation

i) Appointment of consultant:

The project was scheduled to commence from July 1979. But actual work at any site did not start before March 1982. Although the BPDU was in place as a legacy of the First Population Project, the consultant could not be appointed before March 1980. Section 3.02 of Article III of the DCA provided that 'the Borrower shall employ consultants and advisors whose qualifications, experience and terms and conditions of employment shall be satisfactory to the Borrower and the Association'. Section 3.03 of the said article also provided that 'Borrower shall strengthen BPDU through the employment of architectural/engineering consultants whose qualifications, experience and terms and conditions of employment shall be satisfactory to the Borrower and the Association'. Section 6.01 of the DCA made employment of such a consultant a precondition of effectiveness of the credit agreement. It was, therefore, essential to appoint a suitable architectural/engineering consulting firm before other activities relating to implementation of the project could be commenced.

The procedure for appointment of consultant was time consuming. The rules for procurement under IDA credits provide that any procurement beyond US \$ 100,000 is to be advertised internationally. Preparation of terms of reference for the consultant, advertisement for employment, evaluation of offers and getting concurrence of the government as well as of the IDA took ten months. Agreement was concluded with a consortium of three firms, M/s Hamnett Rowe Warton Group Partnership of UK, M/s Engineering Consultants & Associates Ltd. and M/s Sthapati Sangerther Ltd. of Bangladesh, in March, 1980. That means, the first critical step of implementation of the project took ten months to complete.

ii) Cost rationalisation:

Beginning from April, 1981 till the end of December, 1981, a drive for rationalisation of cost of all development projects was conducted by the Planning Commission. The process effectively halted, for the period, progress of implementation of the project. The consultants could not progress with preconstructional work due to this rationalisation exercise. The rationalisation in case of the UHC project was done by reducing the area of construction of different types of buildings. The following are some of the instances of rationalisation that were effected in this project.

Item of work	Amount of space allowed in the approved PP	Amount of space allowed after rationalisation	Other
1. Thana Health Administrator & Medical Officers	1000 sft	750 sft	
2. Class III employees quarters	-	-	8 in place of 10 units at each centre
3. Class IV employees' quarters	500 sft	400 sft	
4. Nurses dormitory	302 sft	100 sft	

Source: Planning Commission's Memo. No. PC/H-437/79/90 dt. 22/7/81 addressed to Chief, Planning Cell, Health Division.

iii) Acquisition of land and site selection

The problem of land acquisition could have been conspicuous by its absence in the project under study. All the 19 sites of UHCs were included in the 1973 project for construction of 356-Thana Health Complexes. Land acquisition process for most of the sites were completed before 1975 (Table III.7). In spite of these, at few places, namely Kaliyazhuri, Nakhionchori, Bhagatipara and Tarash land acquisition problems were encountered.

Table III.7 : Land Acquisition for 19 UHCs

Sl.No.	Sites	Targeted date of acquisition	Date of Actual acquisition	Reasons for delay
1.	Shibpur	Before 1975	Before 1975	-
2.	Bhaluka	Before 1975	Before 1975	-
3.	Kaliyazhuri [*] Tarail	Before 1975	During 1982	Change of site
4.	Alfadanga	Before 1975	Before 1975	-
5.	Teknaf	Before 1975	Before 1975	-
6.	Nakhionchari [*]	29-9-75	During 1981	Acquisition problem
7.	Lakhai [*]	Before 1975	During 1981	Change of site
8.	Sullah	Before 1975	Before 1975	-
9.	Biswanath	Before 1975	Before 1975	-
10.	Raninagar	Before 1975	Before 1975	-
11.	Bhagatipara [*]	Before 1975	During 1982	Change of site
12.	Sundergonj	Before 1975	Before 1975	-
13.	Durgapur	Before 1975	Before 1975	-
14.	Belkuchi [*]	Before 1975	Before 1975	-
15.	Tarash	Before 1975	During 1981	Change of site
16.	Hakimpur	Before 1975	Before 1975	-
17.	Ranisankail	Before 1975	Before 1975	-
18.	Debhatta	Before 1975	Before 1975	-
19.	Mohd.pur	Before 1975	Before 1975	-

The site selected for Kaliyazhuri Thana Health Complex was very low, so much so that it needed filling of about 12'-0" to bring it to the normal flood water level. Then again a heavy retaining wall had to be constructed around the site to protect it from the erosion from higher water wave during the rainy season. The Executive Engineer, Mymensingh PWD Division-II informed the Project Director that the location of the site was so much in the interior and haor⁽³⁾ of Netrokona Sub-Division that normal progress of the work could not be maintained due to difficult communication system. He proposed that in place of Kaliyazhuri, a UHC should be constructed at Tarail where an area of six acres of land was available with reasonable level of filling (6'-0") and UHCs could be constructed there without difficulty. The proposal was accepted by BPDU and approved by BPDU Coordination and Tender Committee. But it took a considerable amount of time to get the proposal accepted by the IDA.

At Nakhionchari, although khas (state) land was available for construction of the UHC much of the earmarked land was not suitable for construction of the Complex. Above all, the boundaries of the land could not be defined before March 1981. At Tarash and Bhagatipara land acquired for the purpose were found to be too low for economic construction of the centres. Alternative sites had to be acquired before project implementation could be commenced.

-
- (3) An extensive area of lowlying wet land. Much of the area become cultivable in the dry season but are submerged by great expanse of water in the rainy season.

iv) Issuance of work-orders:

It took a long time to issue work-orders after the tenders were opened. On an average 7.5 months were taken to complete all formalities before the work-orders could be issued (Table III.8).

Table III.8: Delay in Issuance of Work-order

Sub-project	Date of opening of tender	Date of issue of work-order	Time taken to issue work-order (month)
Teknaf		3-1-82	-
Alfadanga	20-2-82	29-4-82	2
Debhatta	-	4-5-82	-
Nakhionchari	2-83	20-7-82	-
Mohammadpur	20-2-82	20-7-82	5
Tarail	20-2-82	5-8-82	6.5
Shibpur	20-2-82	23-8-82	6
Raninagar	20-2-82	21-10-82	8
Durgapur	20-2-82	15-12-82	10
Sundergonj	27-7-82	27-12-82	5
Biswanath	27-7-82	30-12-82	5
Sulla	23-9-82	4-1-83	3.5
Bhaluka	27-7-82	6-1-83	5
Hakimpur	27-7-82	20-1-83	6
Ranisankail	27-7-82	20-1-83	6
Belkuchi	20-2-82	20-2-83	12
Bhagatipara	20-2-82	10-11-83	21
Bamoi	-	7-12-83	-
Tarash	-	25-5-84	-

Available information indicates that in case of Bhagatipara it took 21 months to issue work-orders after opening of the tenders. Earliest issue of work-order occurred in case of Alfadanga. Tenders were opened in February, 82 and the work-order was issued in April, 82. This happened, probably, due to a mistake on the part of the Executive Engineer, Faridpur PWD Civil Division. He issued work-order on the basis of the letter issued from the office of the Chief Engineer PWD intimating the approval of the Chief Engineer to the lowest Tender. Another important step was yet to be completed before the work-order ought to have been issued. The World Bank procurement procedure required that any contract involving more than US \$ 100,000 had to be vetted by the Bank before it could be formalised. It appears that this mistake was not allowed to be repeated in other cases.

The delays in issuance of work-orders after opening of tenders had telling effects on implementation of the sub-projects. Complications arose out of the claims of the contractors for higher rates to accommodate the escalation of prices of building materials which took place during the lapsed period. Claim of such nature usually took a long time to settle. The Contractors lost interest in early completion of the sub-projects and dragged on.

v) Difficult Transportation Systems;

Peculiarities of geographic location and difficult communication system partly explain delay in implementation of certain sub-projects. Alfadanga in Faridpur, for example, is very difficult to approach after April. From the nearest PWD godown, materials could be transported to the site in the rainy season only with five transhipmen

requiring different modes of transport in different sectors of the journey. From the godown, materials needed to be transported to Modhukhali by road, from Modhukhali to Kashiani by train, from Kashiani railway station to the river bank by horse cart, from river bank to Alfadanga river ghat by boat and finally from Alfadanga river bank to the site again by horse cart. Nakhionchari, Ranisankail, Sulla and Taknaf had posed equal challenges to the transportation systems. Difficult transportation system, not infrequently, impeded smooth progress of construction. The construction contractor at Alfadanga requested issue of material before March in order to avoid transportation difficulty in the rainy season. But PWD could not issue materials before the work order was issued in the last week of April, 1982. When the PWD was ready to issue material the contractor demanded that materials be delivered at site because he was afraid that he would incur heavy losses due to excessive transportation costs. The result was a stalemate that hindered the progress of the work.

vi) Delivery of site

Work order for construction of Sundergonj UHC in Rangpur was issued in December, 1982. But the work could not be started due to non-availability of the site to the contractor. When the contractor reported at the site to start the work the local people did not allow the construction to proceed on the ground that they had not been paid

compensation for the land. It was subsequently found that although the land was selected for construction of a THC as far back as early 1975 and the owners duly notified, estimate for compensation to be paid to the owners had not been prepared by the office of the Deputy Commissioner, Rangpur. The estimate for the land was prepared in March, 1983 after the work had been halted by the owners of the land. Administrative approval for payment of compensation to the owners of the land was issued by the Ministry of Health and Population Control in March, 1983 and the work of construction started in April, 1983.

Vii) Non issue of building materials by PWD

Most of the tenders relating to the sub-projects were floated by the middle of 1982 (Table III.8). The estimates were prepared on the assumption that building materials like brick, cement, rod, sand etc. would be issued to contractors by PWD. The contractors were to be allowed only transport charges from godown to the site. By the end of 1982, a major change of policy of the government occurred relating to issue of materials to the contractors. It was decided to stop this practice. Instead, the contractors would be required to procure their own materials. This meant a substantial change of perspective of the contracts. Larger investment of funds were required of the contractors. If escalation of price did not occur in the intervening period this would also mean additional profit to those contractors who would mobilise the required amount of fund. Lack of preparedness of the contractors for additional investment coupled with escalations of

market price of certain important building materials complicated prospect of smooth progress of the sub-projects. There was no ready mechanism in the hands of PWD to cope with the resultant consternation of the contractors.

PWD was, however, protected by Article 23.3 of the contract which requires that in case the government fails to supply materials the contractor is to procure his own materials. PWD resorted to the protection of this Article in respect to contracts relating to Sulla, Bhaluka, Biswanath, Sundarganj, Ranisankail, Hakimpur and Raninagar. Few contractors who had enough financial resources continued implementation of the contracts, while others started clamouring for higher rates for procurement of materials. Notable claim for price escalation came from contractors of Bamoi, Tarash, Durgapur and Bhagatipara. This phenomena significantly delayed implementation of the sub-project.

viii) Water supply arrangement

Water supply arrangement has frequently been a stumbling block in the process of implementation of the sub-projects. In the case of Nakhionchari UHC, water supply could not be provided even after one year of completion of construction work. For all the 19-UHCs, the consultants prepared estimate for providing water supply by sinking deep tubewell at the sites. The typical scheme of water supply arrangement did not work every where. At Sulla (Sunamgonj) running water supply could not be provided due to absence of electric supply at the site. Efforts were made to instal a generator at Sulla but it was not

approved by the authorities for high cost involvement. At Sundargonj (Gaibandha) 5 test borings were needed before acceptable level of iron content of water could be established.

At Nakhiochari (Bandarban) providing water supply by sinking a deep tubewell was an absurd idea. The site was a hilly one. Attempt to strike a good water layer by sinking a deep tubewell proved to be abortive when local Bangladesh Agricultural Development Corporation (BADC) officials made an attempt in the vicinity. So the idea of sinking a deep tubewell was abandoned. Attempt was made to provide water supply by excavating pond within the campus. The pond was good enough source of water in the rainy season, but it dried up in the winter. Finally, provision was made 'for external water supply installation with the help of electric connection to motor pumps set taking the source of water from nearby canal with layout of required length of GI pipe for storage of sufficient volume of water in the reserve tank to cater to the demand of the hospital complex throughout the year. Thus the problems of water supply at Nakhionchari UHC was solved and the complex was handed over to the requiring body in February, 1987.

ix) Provision of electric connection

Delay in providing appropriate electric connection has been the most common cause for delay in completion of the sub-projects. As many as ten sub-projects suffered delay due to this reason (Table II.8). Construction work including internal electrical work

was completed three months ahead of schedule at Shibpur. But the buildings could not be handed over to the requiring body for six months only for the delay in providing electric connection. Electric connection was accomplished within 3 days as soon as it was known that the President was to open the complex in March, 1984. At Hakimpur (Dinajpur) construction work was completed by the end of 1984. But handing over of the complex was delayed upto July, 1985, when temporary electric connection was provided. Installation of a transformer and provision of HT service connection had to wait another full year.

At Sulla (Sunamganj) problem of electrification was the non-existence of service line within the vicinity. Power Development Board could not be persuaded to provide cross haor HT or LT line to energize the UHC. Proposal for provision of a generator was turned down because of high cost involvement. X-Ray machine, sterilisation machine etc. were kept idle till completion of the project.

In most cases where there has been delay in providing electric connection the onus would not automatically lie on the PDB. In some cases, initiative to obtain service connection were taken only at the late stage of progress of civil work. In other instances, installation of transformers was not anticipated and necessary provision was not in the estimate. When the need arose, it took a long time to get necessary allocation of fund for the purpose.

At Nakhionchari the problem relating to electricity was of a

different type. PDB High Tension (HT) line crossed the UHC over the residential buildings. Obviously, when the layout plans were prepared by the consultants and approved by the authorities appropriate notice of this fact was not taken. When the buildings were completed, it was not considered safe to have the HT line crossing the campus. After a couple of years and voluminous correspondence between the project authorities and the PDB, it was finally possible to shift the HT poles from the campus at a cost of Tk. .028 crore.

Conclusion

One of the important determining factors of the pace of implementation of the project was the location of the sub-projects. These were all located in the rural areas and some were in some of the inaccessible areas of the country. Some of the problems faced by the project and the bottlenecks which impeded implementation of the sub-projects are likely to be typical to any construction projects in rural Bangladesh. Some other problems relate to more basic questions of sound management practice and institutional setting of project implementation. These problems are likely to be encountered in other foreign aided projects. The apparent remedies which may be arrived at through an analysis of the problems and bottlenecks shall not be ideal solution in all cases but may be useful in avoiding similar situation in other projects.

Appointment of a consulting firm as a precondition for credit effectiveness of such a simple project as construction, furnishing and

equipping of a few UHCs smack of total lack of confidence of the donor agencies on capabilities of GOB agencies or the donor agencies' unjustifiable tendency to rely on the efficacy of consulting service. No high level of expertise were needed in any aspects of implementation of this project which would not be available with BPWD. In fact, planning and designing of a typical UHC and replicating the same in different locations with minor variations could have been done more quickly by strengthening the Population Planning Cell of the PWD. It took 10 months to appoint the consulting firm and the consulting firm took more than two years to complete activities preparatory to floating of tenders. For these initial three years of the project, the principal stakeholders of the project i.e. BPDU and PWD were simply sitting on the fence. Since land acquisition was not a big issue for this project, the pre-tender activities could be completed by BPWD in less than half the time consumed for the purpose, given the fact the PWD had a network of civil division spread throughout the country which the consulting firm lacked.

The consultants prepared design and estimates, PWD selected contractors and supervised construction. Department of Supply and Inspection procured equipment and Project Finance Cell of Ministry of Health kept accounts and arranged reimbursement of fund from the donors. BPDU Coordination Committee and Population Control Cell of BPWD coordinated. The scheme of the things did not leave much for BPDU to do. Yet BPDU was conceived as the focal point of implementation

of the project. The role played by BPDU could as well be played by Population Control Cell of PWD had it been given the necessary outfit.

Utility of BPDU and for that matter any Project Implementation Office lies in its exclusiveness of responsibility for implementation of the project. BPDU's role was ineffective, as it lacked the necessary power to take decisions. Resultantly BPDU became an unnecessary additional tier of decision making process. When project office is set up exclusively for implementation of a project it should have both power and responsibility. Otherwise, it does not help implementation.

Electrification of the THCs proved to be a major obstacle in timely completion of the sub-projects. It appears that while estimates for electrical work were prepared total load factor of a UHC was not accurately assessed. Nor was availability of HT service line in the vicinity taken into account. As a result, demand for installation of transformer came from most of the UHCs. And it took a long time to process fund to meet the additional cost. Timely initiative for provisions of appropriate service connection would have expedited completion of many of the sub-projects.

Work programme for construction work in rural areas should always take into account problem of communication in different seasons. In many areas, mobilisation of building materials in rainy season become extremely difficult. But in other areas, rainy season may afford the most economical means of transportation for mobilisation of building materials. It is, therefore, advisable that work programme should, as far as practicable, be site specific instead of being uniform for all sites.

Chapter IV

Case Study: Dairy and Cattle Breeding Farm, Faridpur

Project Digest

Draft power continues to be a major tilling device in Bangladesh since only 2% of our 22.5 million acres of cultivated land are currently under mechanised cultivation. Due to acute shortage of bullocks and increase in cropping intensity, the land preparation and post harvest operation for agricultural activities are greatly affected. On the other hand, nutritional deficiency is on the rise due to lower rate of productivity of the local breed. Such problems can be solved only through genetic evolution which may augment productivity of the local breed in terms of milk, meat and draft power.

The project, "Dairy and Cattle Breeding Farm" at Upazila Nagarkanda, Faridpur was conceived initially as a miniature replication of the Dairy Farm at Savar, Dhaka to meet these gaps. The project was designed to develop and maintain 100 cross-breed frisian and local stock for the production of LXF breeding bulls, to develop the farm as rearing unit for the production of breeding bulls and also for distribution of unused bull calves for draft purpose and heifers to the interested farmers for the purpose of increasing quality animals for more milk and meat production. The project objectives also included multiplication and distribution of seeds and seedling of HYV grasses and fodder crops and imparting of practical training to the farmers about rearing and management of cross-breed-animals. Thus the

prime objective of this project was to develop as a rearing unit of the cross-bred animals for the production of breeding bulls. The calves (Males and Females) would be available from the central cattle breeding station at Savar, and also from the farmers. Cross bred calves would also be available at the age of 6-8 months and would be reared up till they attain the age of puberty. All preliminary tests and trials would be done for the selection of breeding bulls and those found unsuitable for breeding purpose would be sold to the bonafide farmers as bullock for draft purpose. The selected bulls would be taken back to the central cattle breeding station, Savar, for final selection and would be distributed to different district artificial insemination centres as per breeding plan and programme undertaken by the central A.I. extension project. Some of the bulls of inferior quality but suitable for natural services would be kept ready and would be distributed among centres where A.I. activities could be developed. The best quality heifers would be kept in the farm for developing the mother stock while others would be distributed to the interested farmers in a concentrated area through heifer distribution programme for improving the quality of local stock in a more rapid way for production of milk, meat and draft power.

Qualitatively superior animal feeds and fodders in adequate quantity ensures required temporal growth in quality animals. An increase in quality animals in the country thus could augment demand for fodder in the country. This situation warrants that all available area in the farm be brought under fodder cultivation. Thus as

one of the complementary objectives, the project activities included fodder cultivation in all the project area. 50 acres of land was to be used for production of H.Y.V. maize and another 75 acres would be cultivated for the production of H.Y.V. fodder such as Napier, para cowpee, Mati Kalai. After fulfilling the demand for green grass in the farm excess fodder and maize seed would be distributed among different Upazilas around greater Faridpur, Kushtia and Jessore District. The project also anticipated to cater to the extension activities so that knowledge on improved breed in terms of maintenance and management of quality animals in rural condition was disseminated. A concomitant of these extension activities would be to motivate the farmer about the intensive care, management and benefits of maintaining quality animals.

Financing of the Project

This project bears a unique feature in its financing arrangements. The total revised cost of the project estimated to be Tk. 2.66 crore was to come entirely from the own fund of Government of Bangladesh (GOB). Major componentwise cost of the project as envisaged in the original and the revised PP's is given in table IV.1.

Table IV.1: Componentwise Cost of the Project:
Original and Revised

Item	Local		(Tk. in crore)
	Original	Revised	Percentage of total cost
Land acquisition	0.50	0.55	20.65
Land development	0.05	0.05	1.88
Construction	0.71	1.47	55.65
Stores and equipment	0.20 *	0.33	12.39
Transport and Vehicles	0.03	0.03	1.23
Pay and allowance	0.08	0.08	0.08
Contingencies	0.27	0.15	5.55
TOTAL	1.84	2.66	100.00

(*includes 0.06 crore Foreign exchange component.)

Source: Project Document.

Financial Phasing

The financial phasing of the project is given in table IV.2.

Table IV.2: Financial Phasing: Actual vs ADP Allocation

(Tk.in crore)				
Year	ADP Allocation	Fund Release	Actual Expenditure	Cumulative expenditure
1980/81	0.08	0.08	0.08	0.08
1981/82	-	-	-	0.08
1982/83	0.30	0.30	0.30	0.38
1983/84	0.12	0.50	0.16	0.54
1984/85	0.23	0.22	0.22	0.76
1985/86	0.55	0.55	0.54	1.30
1986/87	0.86	1.25	1.03	2.33
1987/88	0.33 *			

* The rest amount of Tk.0.33 crore was earmarked in the ADP for the year 1987/88 as wind up project.

Source: Project Completion Report, IMED, Form No.04.

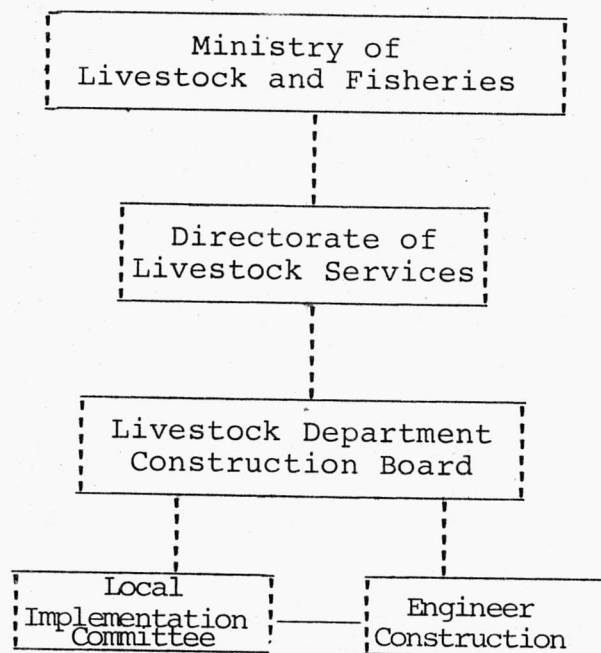
This table corroborates the idea that the project work had suffered due to inadequate provision in the ADP during the first two years of the project. In fact, no fund was allocated during 1981/82. Only during the year 1986/87, fund utilization exceeded the ADP allocation of 0.86 crore, still the amount was less than the release of fund in ADP.

Procedure Guide

The sponsoring agency of the project was Ministry of Fisheries and Livestock and the responsibility of execution, operation and maintenance was entrusted to the Directorate of Livestock Services. The different activities of the project were undertaken through different institutional set up. Land acquisition which accounted for 21 percent of total cost was arranged through a triangular set up, a common feature in most of the projects requiring land. The institutional units in land acquisition comprised Local Site Selection Committee, Ministry of Livestock and Fisheries and the Ministry of Land. Project Implementation Committee included District Livestock Officer as Chairman and Assistant Director, Animal Production (ADAP) and Sadar Upazila Livestock Officer as members. The construction work undertaken by the consulting firm, Engineer Consortium Limited had been supervised by Livestock Department Construction Board (LDCB) and by Project Implementation Committee. The Livestock Department Construction Board is headed by the Director of Livestock Service as Chairman, Deputy Director (Administration) as member-secretary and Deputy Secretary (Ministry of Fisheries and Livestock) as member. The Engineer Consortium Limited was entrusted with the task of preparation of design and estimate of the cost of structures. The estimate needed to be approved by LDCB.

A schematic presentation of the major units in the implementation

of the project is given below :



Master Schedule

The components of the project included physical components such as acquisition of land, land development, construction of different structures, procurement of machinery and equipment and finally appointment of manpower for operation of the project. The revised project proforma list 18 activities on construction head, 14 activities as other construction, 6 items as machinery and 90 items as equipment. Besides there were provision for transport and vehicles. Arrangement of all these activities in a defined time frame is a difficult job. We therefore, considered only more important items in the master schedule. The following table gives an overview of the major tasks with starting and completion date alongwith expected duration of each task. This table (table IV.3) will thus shed light on major implementation problems.

Table IV.3 : Activities with Stating and Completion Date

Name of the Activities	Starting date Completion date	Expected duration (in month)	Remarks
1	2	3	4
I) <u>Pre-construction</u>			
a) Land Acquisition (154.21 acres)	May, 1981 March, 1985	-	Substantial Delay
b) Land development	June, 1986 Sept., 1986	3 month	
II) <u>Construction</u>			
A. <u>Functional Building:</u>			
1. Office building cum dairy room (1250 sft.)	April, 1985 Dec., 1985	8 "	
2. Godown Shed (1500 sft.)	July, 1986 Feb., 1987	5 "	
3. Cow Shed 2 Nos. (5000 sft)	July, 1985 June, 1986	5 "	Delay
4. Calf Shed (600 sft)	Feb., 1987 June, 1987	3 "	
5. Calf Pen (1000 sft)	"	" "	
6. Heifer Shed (1200 sft)	Feb., 1987 June, 1987	3 "	
7. Bull Calves Shed (1200 sft)	July, 1985 June, 1986	3 "	Delay
8. Heifer Shed for 40" (2-4 years age) (2000 sft)	Feb., 1987 June, 1987	3 "	
9. One Shed for 40 bulls (2400 sft)	July, 1985 June, 1986	3 "	
10. Milk Record Room (400 sft)	April, 1985 Dec., 1985	3 "	Delay
11. Bullock Shed (400 sft)	Feb., 1986 June, 1986	3 "	
12. Bull Shed (500 sft)	" "	" "	

1	2	3	4
13. Dispensary Room	<u>Feb., 1987</u> <u>June, 1987</u>	3 month	
14. Patient Shed for animal. (240 sft)	<u>July, 1985</u> <u>Dec., 1985</u>	3 "	
15. Maternity Shed (750 sft)	<u>July, 1985</u> <u>June, 1986</u>	3 "	Delay
B. <u>Residential Building</u>			
16. 1 unit Manager quarter (1250 sft)	<u>Feb., 1987</u> <u>June, 1987</u>	5 "	
17. 11 unit Class III Staff quarter (6050 sft)	<u>April, 1985</u> <u>June, 1986</u>	5 "	Delay
18. Dormitory for Class IV Staff quarter (3000 sft)	<u>Jan., 1987</u> <u>June, 1987</u>	5 "	
19. Electrification	<u>Feb., 1987</u> <u>June, 1987</u>	3 "	
C. <u>Other Construction</u>			
20. Run Way for Calf Pen (1335 sft)	<u>Feb., 1987</u> <u>June, 1987</u>	3 "	
21. Run Way for Heifer Shed (1-2 years old) (6525 sft)	<u>Feb., 1987</u> <u>June, 1987</u>	3 "	
22. Run Way for Bull Shed (1-2 years old) (800 sft)	<u>Feb., 1987</u> <u>June, 1987</u>	3 "	
23. Run Way for Heifer Shed (2-4 years old) (7360 sft)	<u>Feb., 1987</u> <u>June, 1987</u>	3 "	
24. Run Way for Bull Shed (600 sft)	<u>Feb., 1987</u> <u>June, 1987</u>	3 "	
25. Run Way for Patient Shed (270 sft)	<u>Feb., 1987</u> <u>June, 1987</u>	3 "	
26. Surface silo (3000 sft)	<u>Feb., 1987</u> <u>June, 1987</u>	" "	

1	2	3	4
27. Dung Pit (40'X 20' X 3')	<u>Feb., 1987</u> <u>June, 1987</u>	3	month
28. Main gate with guard Room	<u>Feb., 1987</u> <u>June, 1987</u>	"	"
29. Box for Calves (20 Nos.)	" "	"	"
30. Deep Tube Well (2 Nos.)	<u>Feb., 1986</u> <u>June, 1987</u>	3	"
31. Overhead Tank with pipe line (20,000 gallon capacity)	<u>Feb., 1987</u> <u>June, 1987</u>	"	"
32. Over head Electri- fication with Transformer	<u>Feb., 1986</u> <u>June, 1987</u>	"	"
33. Internal Campus Electrification	<u>Feb., 1986</u> <u>June, 1987</u>	"	"

III) Stores and Equipments:

1. Machinery	<u>Feb., 1986</u> <u>June, 1987</u>	6	month
2. Equipments	<u>July, 1985</u> <u>June, 1987</u>	6	"
3. Others (stock)	<u>Feb., 1986</u> <u>June, 1986</u>	3	"

Implementation Experience

i) Delay in land acquisition

The master schedule of the project activities highlights the major cause of delay in land acquisition. The local site selection committee tentatively selected a site in mouza Billgobindapur in the Nagarkanda Upazila on May, 1981. High officials from the Ministry of Fisheries and Livestock, the Planning Commission and also from the Department of Livestock visited the proposed site. Inconvenience in respect of feeder road from highway and irregular size and shape of the proposed site for a suitable demonstration and breeding farm warranted searching of alternative site for the rearing farm. Moreover, the site was about 1 Km away from the main road and it was anticipated that owing to inadequate road communication facilities marketing of milk might suffer.

The Project Implementation Committee searched for alternative sites and two sites were selected and a proposal was submitted to the local site selection committee for approval. District authority balked at the site of Mallikapur in the Kotawali Police Station for relative importance of the site on the ground of expansion of Faridpur town and the other at Kanaipur did not receive final approval from the Ministry of Land on the recommendation of one man commission. The Commission however, recommended the selection of the first site at Billgobindapur. The Project Director did not approve the very site for unsuitability of it as a rearing farm. In order to resolve this impasse, the then Director of Livestock paid a visit at the site and agreed to establish the farm if the proposed site

was available from the main road. The original scheme proposed acquisition of 100 acres of land but the new proposal by the Director of Livestock Services necessitated acquisition of 160 acres of land right from the highway.

The Project Implementation Committee prepared a blueprint of 160 acres of land from the main road which included mouza Billgobindapur as well as two other adjacent mouza. The cost of about 154.21 acre could be covered by the total allocation for land. Thus present site which is about 16 Km from the Faridpur town on the Faridpur-Barisal highway steered clear of the previous drawbacks and the local site selection committee ended up with final approval from the Ministry of Land in November, 1984. The process of land acquisition was completed and the site was handed over by the local Site Selection Committee to the Department of Livestock on March, 1985. The implementation period which stretched from 1980/81 to 1984/85 was mostly spent in acquisition of land.

ii) Inadequate allocation of fund

Land acquisition could not proceed on schedule owing to inadequate allocation of fund in the ADP. The ADP allocation could not cover the full value of the acquired land. In the financial year 1980/81 only Tk. 0.08 crore was allocated for land acquisition with no allocation in ADP for 1981/82. In 1982/83 and in 1983/84, an amount of Tk. 0.30 crore and Tk. 0.12 crore respectively were released with a cumulative allocation of 0.50 crore. The fund thus available could then be utilized for land acquisition and paved the

way for undertaking further activities.

iii) Revision of the project

The project initially envisaged cost of Tk.1.84 crore and the implementation period stretched from 1980/81 to 1984/85. Actual implementation period lagged far behind schedule and the civil work could only be started during 1985/86. The intervening period experienced increase in cost for the construction materials and for equipment. Furthermore, a shift from the project objectives from breeding farm to a rearing unit needed revision and modification of the project. So a scheme of beyond category 'A' costing approximately Tk.9.15 crore was submitted with proposal for additional acquisition of 100 acres of land and boundary wall in October, 1985. The project was submitted to the Ministry in November, 1985. Departmental Project Evaluation Committee took decision in February, 1986 and advised the project authority to redesign the project which would include only the cost contingency of Tk.0.83 crore on unspent balance of Tk.1.70 crore. Thus a revised version of the project at a cost of Tk. 2.66 crore was submitted to PEC during May, 1986. The revised scheme however did not shelve the project's budding objectives for production of milk and instead incorporated objectives as a rearing centre of male and female calves and cross-bred heifers (FXL) from the Central Cattle Breeding Station, Savar and also from the contact farmers. It was decided that 100 milch kine would be on the farm for production of 1,31,400 litres of milk each year.

iv) Faulty design

The initial project suffered from faulty design. There had been no provision

for electricity in the original scheme. The godown encompassed an area of only 600 sq feet which was too small for a farm, as only Tk. 0.15 crore was earmarked for site development and only 400 sq feet for a garage-cum-store. The revised scheme allocated an amount of Tk. 0.21 crore for electrification. There were two options for electrification. The electricity was available from sub-station Bakunda, 6 Km away from the farm. Power Development Board gave an estimate of Tk. 0.40 crore much above the earmarked allocation in the revised PP. The Project Committee did not agree and instead preferred installation of a transformer in the farm from the high tension line passing over the farm area. Power Development Board was less interested in the second option but later personal influence of a local minister and ingenuity of the Project Director helped in getting out of the impasse and electricity was tapped from high tension line through installation of a transformer.

v) Absence of delegation of authority to project personnel

Faulty design of the project needed revision and modification to suit the purpose of a rearing unit. The technical change needed approval of Livestock Department Construction Board (LDCB). This happened in the construction of run way for heifer shed and run way for bull shed. In case of deep tubewell, estimated cost by Engineer Consortium (EC) was too high. Estimated cost by the Bangladesh Agricultural Development Corporation for sinking deep tubewell seemed reasonable. Project Implementation Committee needed to get approval of the revised cost from the LDCB on this account also.

vi) Delay in procurement of machinery and equipment

The procurement was under the direct supervision of Deputy Director (Stores and Equipment). The delay in the procurement of machinery and equipment was due to the delay in floatation of tenders.

Conclusion:

The implementation experience trails an idea that the project may initially be stylised with the purpose of sale of land by an interested quarter. The site selection episode and interview with the project personnel validate this fact. The project authority had to accept the first proposed site at Billgobindapur. The project at the very initial stage of conception lacked a few basic infrastructural facilities such as fencing and drainage. Moreover, in the first project proforma there was no provision for electrical connection. The basic defects of the project were taken into consideration when a revised project beyond category 'A' costing approximately Tk.9.15 crore was prepared. The Departmental Project Evaluation Committee, however, did not consider the revised cost estimate and instead considered the additional cost of Tk.0.80 crore on unspent balance of Tk. 1.07 crore only owing to cost contingency.

The prime cause for delay in implementation of this project was the acquisition of land; a concomitant of inadequate fund allocation in ADP. There was minor delay in other activities such as in civil construction and procurement of machinery and equipment.

Besides, personnel associated with the project at the project initiation stage were deficient in some of the basic know-how pertaining to this project. This led to the re-estimation of cost of some of the major items such as installation of deep tubewell and electrification of the farm area. The local implementation committee had very little authority required for carrying out activities during crisis resulting in delayed implementation. The procurement was under the direct supervision of Deputy Director (Stores and equipment). Thus the delay in procurement of machinery and equipment was due to delay in floating of tenders.

Chapter V

Case Study: The Atomic Energy Research Institute (AERI), Savar.

Project Digest

The project was originally named the Atomic Energy Research Establishment-AERE. It was planned to consist of the following ten institutes/centres which would make an integrated laboratory complex for research and development activities in nuclear science and technology especially for its peaceful use in agriculture, medical science, industry and power generation. The institutes were as follow :

- i) Irradiation and Pest Control Research Institute (IPCORI).
- ii) Institute of Nuclear Technology (INT)
- iii) Institute of Nuclear Medicine (INM)
- iv) Institute of Electronics (IE)
- v) National Computer Centre (NCC)
- vi) Institute of Environmental Science and Health Physics (IESHP)
- vii) Institute of Materials Science and Technology (IMST)
- viii) Nuclear Training Institute (NTI)
- ix) Institute of Space and Atmospheric Research (ISAR)
- x) Institute of Nuclear Minerals and Materials (INMM)

The site of the project is located at Ganakbari, Savar. Formulated in 1975 and approved by the ECNEC in 1976, the project was to be completed in 10 years in two phases at a total cost of Tk.35.10 crore. An amount of Tk.14.20 crore was allocated for the phase-I which covers a three year period from 1975-76 to 1977-78. For the phase-II, the stipulated time period was seven years from 1978-79 to 1984-85

and the proposed allocation was Tk.20.90 crore. In fact, for all practical purposes the project in this study refers only to its phase-I.

The scheme of the project provided for 258.8 acres of land, 1870 officers and staff, 3,50,500 sft of building space for different institutes, 5,48,500 sft of residential buildings and 32,500 sft of common facilities like workshop, library, cafeteria etc. Other facilities of the project included (i) a 3 MW TRIGA Mark-II research reactor (ii) a 4341 system IBM digital mainframe computer and (iii) a 50,000 curic cobalt-60 source.

It appears from the table V-1 that the PP of this project was revised a few times. The original project proforma (PP) which was prepared in the year 1975 had to be revised for a few reasons. First, price escalation over the period 1976-1980 was not reflected in the document probably because, according to the original plan, the project (i.e, phase-I) was supposed to be completed by the year 1978. Secondly and more importantly, due to some unforeseen contingencies, the design of the project itself had to be changed drastically. Thirdly, the amount of fund released over this period was only twenty percent of the estimated total cost. This was too little to meet the cost of the project. On the basis of discussions with the PEC, a revised project was submitted in 1980 for a total cost of 70.22. The PEC recommended for (i) renaming the establishment as Atomic Energy Research Institute, AERI (ii) cutting down the number of institutes into the

following five divisions:-

1. Nuclear Science and Technology Division (NSTD)
2. Food and Radiation Biology Division (FRBD)
3. Computer Science Division (CSD)
4. Nuclear Medicine Division (NMD)
5. Electronics and Materials Science Division (EMSD)

and (iii) reducing the cost of the project to Tk.69.21 crore including a foreign exchange component of Tk.24.29 crore. This scheme of the project had a total building area of 7,46,700 sft including 2,91,000 sft of functional building, 3,86,200 sft of residential building and 69,500 sft of common facilities. The provision for atomic reactor, computer and cobalt-60 source remained as before. The salient features of this PP for AERI, 1981 in comparison to the original one are as follows:-

<u>Head</u>	<u>1981 PP</u>	<u>1975 PP</u>
Name of the Project	AERI	AERE
Number of the component Divisions	five	Ten
Other infrastructure/facilities of the project		
i) Land	168.8 acre	258.8 acres
ii) Laboratory & related building	2,91,500 sft	350,500 sft
iii) Residential building	3,86,200 sft	548,500 sft
iv) School building	6,000 sft	
v) Manpower	1680	1870
(a) Scientific Officers	460	
(b) Others	1220	
Total cost:	Tk.69.21 crore	14.2 crore
(i) Local Currency cost (LC cost/LCC)	Tk.44.91 crore	9.93 crore
(ii) Foreign Currency cost (FC cost /FCC)	Tk.24.29 crore	4.27 crore
Recurring Cost	Tk. 5.07,89 crore	

TABLE: V-1

A yearwise comparative statement of financial phasing
and actual fund release for the Atomic Energy Research
Institute, Savar, Dhaka.

(in crore taka)												
PP	Allocation/ Release	Y	E	A	R							Total cost
		1975/76	76-77	77-78	78-79	79-80	80-81	81-82	82-83	83-84	84-85	85-86
PP provision (cost)		1.63	5.90	6.62	(4.00	6.00	4.00	3.00	2.00	1.00	.90)	* 35.10
Actual releas		.97	.79	1.16	3.73	6.06	-	-	-	-	-	
1st Revision '80 pp (cost)		.97	.79	1.16	3.73	6.06	10.93	13.87	10.54	10.37	10.77	** 69.21
Actual release		.97	.79	1.16	3.73	6.06	-	-	-	-	-	
2nd Revision '81												54.33
3rd Revision '82		.97	.79	1.16	3.73	6.06	7.20	7.16	-			54.09
4th Revision '83		.97	.79	1.16	3.73	6.06	7.20	7.16	6.00	10.02	10.51	54.54
Actual release		.97	.97	1.16	3.73	6.06	7.20	7.16	5.98	6.04	7.86	
Yearwise Total (PP provision)		1.63	5.90	6.62	4.00	6.00	10.93	13.87	10.54	10.92	10.51	
Actual release)		.97	.79	1.16	3.73	6.06	7.20	7.16	5.98	6.04	7.86	

* This also includes the phase-II of the project (within perenthesis)

* * From the first revision onwards cost estimates are only for phase-I, extended over over a longer period
and the project refers to this phase only.

Under this scheme the number of institutes were reduced to five. The IESHP and INMM has been merged with INT and the IE and IMST have also been merged together. Space and Atmospheric Research Centre (SARC) was proposed to be transferred to the Space and Remote Sensing Organisation (SPARSO). The NTI was dropped and its activities were to be implemented as a programme by the scientists. The clinical part of the NMD would be conducted at IPGMR. However, research activities relating to nuclear medicine would continue to be at the project site at Savar.

It was realized later that the project would not be completed by June 1985 due to shortage of fund. But the project had to reach the end of its phase-I and be functional by June, 85. Therefore, it was decided that no new work will be undertaken unless it is indispensable in nature or essential for completion of the work already undertaken. It was also decided that the second phase would take up the rest of the project work. Accordingly, the project was revised for a total cost of Tk.54.33 crore with a foreign exchange component of Tk.20.94 crore and manpower requirement of 1680.

As per recommendation of the Martial Law Committee on Rationalisation of the ADP, the project provision was further reduced to a total of Tk.54.04 crore including cost of contingency. This was reflected in the PP submitted to PEC in October, 1982.

Major modifications in the PP were as follows:

- | | |
|----------------------------|--------------|
| i. land | 168.8 acre |
| ii. lab & related building | 2,13,000 sft |

iii. Residential building (88 family units)	3,43,800 sft
iv. School building	6,000 sft
v. Manpower	1,167 sft
a. Officer	350
b. Support staff	817
vi. Annual recurrent expenditure Tk.5.87 crore	

The PEC discussed the PP in December, '82 and made same observations. In October, '83 the PP (modified as per recommendations of the PEC) was discussed again. It was decided that the project would be sent to ECNEC for final approval. The scheme of the project was recast in the light of the decisions of an inter-ministrial meeting which included among others, reducing the provision for manpower and enhancing the same for recurrent expenditures. In March, '84 another PP was prepared to reflect those modifications.

The PP was discussed by the PEC in October, '84 and was sent alongwith some recommendations to the ECNEC for final approval. Some of the recommendations were as follows:

- i) Extension of implementation period;
- ii) Arranging for recurrent expenditures from the revenue budget from the year 1985/86. This is because due to extension of implementation period the funds earmarked for the head 'salary and Allowance' would run out long before the expiry of the project period.

In October, '85 the project was finally approved by the ECNEC for an estimated total cost of Tk.54.06 crore including a foreign

exchange component of Tk.19.31 crore. The ECNEC also approved 967 officers and staff and a recurrent expenditure of Tk.5.88 crore including Tk.0.97 crore in foreign exchange.

It is obvious that the revisions in the PP brought about drastic changes in the content of the project. This changes reflected deviations that took the scheme away from the one originally conceived. Moreover, the changes were dictated not by technical reasons but by pecuniary hardship.

This project was fully funded by the Government of Bangladesh (GOB). The IAEA provided some assistance in procurement of equipment from abroad. All other project component was supported by the GOB. In almost every year, fund released fell short of the fund approved. Financial and physical phasing of the project was initially as follows:

<u>Year</u>	<u>1975-76</u>	<u>76-77</u>	<u>77-78</u>
Financial Progress (In crore Taka)	1.63	5.90	6.62
Physical Progress (In percentage)	11.4	41.6	47

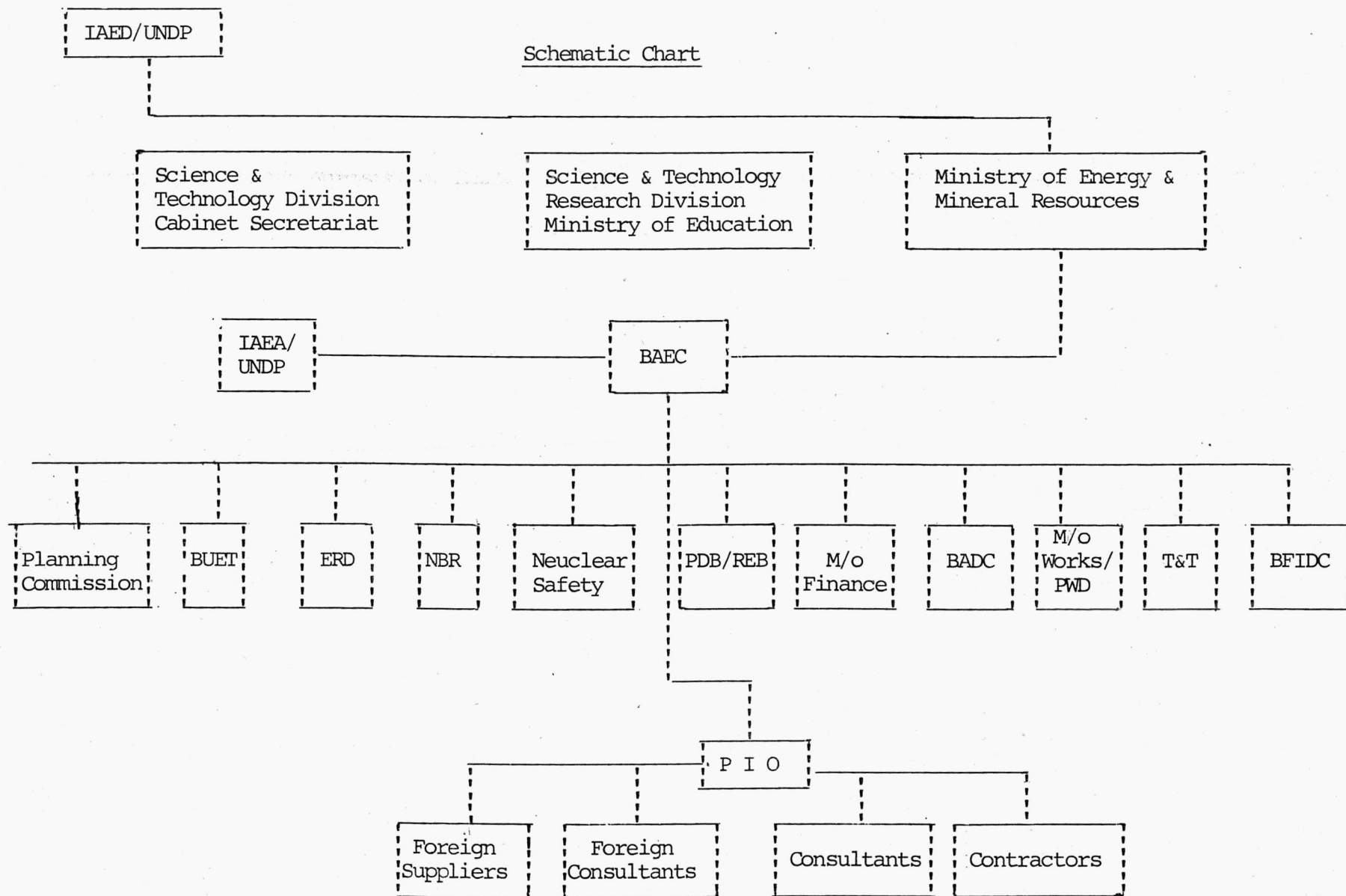
In fact during the period between 1975-76 to 1977-78 only Tk. 2.93 crore was released. Table V-I shows that even in the revised PP's, realised financial phasing did not follow the planned financial phasing of the project. And as such the project was prolonged beyond the stipulated period. However, the absorption position remained satisfactory over the project period.

Implementation process:

Initially the project was sponsored by the Science and Technology Division,

Cabinet Secretariat. Later, the project was moved to the sponsorship of the Science and Technology Research (STR) Division of the Ministry of Energy and Mineral Resources. The responsibility for implementation of the project remained with the Bangladesh Atomic Energy Commission (BAEC).

In course of implementation, the management of the project has been in functional contact with different agencies/offices/institutions for various support services. A schematic chart briefly describes this relationship. Since the project is an attempt at peaceful use of nuclear technology, the International Atomic Energy Agency (IAEA) provided material support and extended technical co-operation. Some equipment was supplied by the Agency free of cost. On behalf of the IAEA, the resident mission of the UNDP provided expert and support services, supplied the equipment and arranged for training of manpower. Other agencies which were involved with the project are: the Planning Commission, the External Resources Division (ERD) of the Ministry of Planning, the Ministry of Finance, the Ministry of Works/PWD, the Telegraph and Telephone Board (T&T Board), the Power Development Board (PDB), the Rural Electrification Board (REB), the Bangladesh Agricultural Development Corporation (BADC), the Bangladesh University of Engineering and Technology (BUET) and the Dhaka University. Besides, the project office had to enlist the support services and co-ordinate the works of the foreign consultants and suppliers/contractors and the local consultants, the suppliers and the contractors. There is a "Nuclear Safety Committee". Representative of the government, professionals inside and outside the universities and distinguished persons are members on that committee.



Technical regulations on rates, specification, preparation of tenders and offering of awards etc. were obtained from the Ministry of Works/PWD. Some laboratory furniture was obtained from the Bangladesh Forest Industries Development Corporation (BFIDC). The BADC arranged water supply. The T&T supplied a Tk. 1.00 crore telephone exchange linked to the nationwide dialing (NWD) system, the Power Development Board and the REB have been responsible for steady supply of electricity. The ERD in the Ministry of Planning arranged for foreign exchange and the BUET, provided support in case of technical difficulty.

A key control remained with the Ministry of Establishment. The ministry examined the requirement of the project and accorded governmental approval to the manpower provision of the project.

Project Implementation Office (PIO)

Implementation of the project was vested in the Project Implementation Office - PIO. Following table shows that for the purpose of execution of the project, the pp provided for a manpower strength of 73 and a total cost of 1.10 crore.

Type of Employees	Number	Rate of salary/wages per month in Tk.	Annual salary/wages during period of employment during execution including 40% as fringe benefit (in lakh Tk.	Total wages during execution (in lakh Taka)
Managerial	1	3000.00	0.50	5.00
Technical/Professional	14	2000.00	4.70	47.00
Skilled workers	16	800.00	2.15	21.50
Unskilled	27	600.00	2.72	27.20
Others	15	400/00	1.00	10.00

In fact, the PIO was supported by three sets of people:-

- i) those who worked here in the then East Pakistan under the Directorate of Engineering and Works;
- ii) those who were repatriated from Pakistan and
- iii) the new recruits.

This group of officers and staff were to be absorbed by different divisions of the Institute, once the project becomes fully functional.

The Project Director (PD) was assigned with the tasks of enlisting of support, ensuring of services and co-ordinating of activities of all agencies/bodies involved. Supervision of civil construction and other installations, and purchase and procurement were the core activities of the project office. The project office started with the beginning of the project in May, 1976 and continued its function as a separate entity until 1987 when it was absorbed in the Engineering and General Services (ENGs) Division of the AERI. At the time of absorption, the project office had on its pay roll a total of 53 officers and staff.

In fact, the office of the Project Director (PD) still continues to function. The PD works directly with the Commission. However, the Director General of the AERI who is a Chief Scientific Officer (CSO) (like others in the Institute who are at present 37 in number) is only a formal link between the project office and the Commission. He may advise the Project Director but can seldom direct or intervene.

During execution, the project office had some advantages. The Project Director had always been an engineer by profession. This

permitted him easy access to many technicalities of civil works, installation and construction. Moreover, while other Projects in the Public sector depend for construction on the PWD, the project office had a full fledged engineering set up for managing the project works. However, it was held that the amount of delegation enjoyed by the PD was inadequate.

Procedure Guide:

The Bangladesh Atomic Energy Commission has a few divisions. The Planning and Development (P&D) Division prepares plans (and for that matter the projects) while the Project Division is assigned with implementation of development projects.

Work of the project AERI started long before the site was selected at Ganakbari, Savar. The acquisition process was undertaken, survey was conducted and soil was tested before the beginning of installation of equipment and the construction of buildings.

The project had local and foreign consultants. The local consultants prepared detailed plan layout, design and estimates and specifications for tender documents. The work was done by local contractors on the basis of the specifications, designs and estimates of the construction/civil works installation prepared by the local consultants. Only in specialised areas, necessary expert services were obtained from the IAEA. Tender documents were sold by the project office.

All the bids received were examined and scrutinised by the consultant

who would prepare a comparative statement. The tender evaluation committee in the Commission would accept, within its financial powers, the most suitable tender and also keep a list of the second and the third most suitable tenders.

Only, on three occasions, decisions were taken in the Ministry. The research reactor involved five millions of dollars for its purchase. This was decided at the Ministry. The costs of construction of the reactor building went above the financial power of the committee and thirdly the HVAC (Heating, Ventilation and Air Conditioning) system of the Radio-Isotope production laboratory was also referred to the Ministry even though the matter was well within the power of the Commission. The local consultants managed and supervised the construction work. The BAEC ensured that the construction works were done timely and in accordance with the specifications and designs.

In case of reactor building, layout and structural design was done by the local consultants and placed with the Commission. The Commission, after thorough examination and modifications, if any, would send the same to the foreign suppliers of the reactor. Work orders were issued to the contractors only after the approval of the layout and design by the foreign supplier. In foreign procurement, international tenders were floated. Tender/bids were finally selected through open competitive bidding.

In cases of delay and default, the Commission used pressure and persuasion on the contractors/constructors/suppliers. In some cases,

pressure was the other way round: in unavoidable circumstances, sometimes the specifications had to be modified in order to suit the contractors who would otherwise fail or default the development of the site and construction of internal roads. Subsequently, the construction work of the Isotope production laboratory and an auditorium with a capacity of 350 audience was taken up.

Furnishing and equipping of the project continued throughout the project period.

Monitoring System:

This is a rare GOB funded project which had an implementation of its own. Necessary engineering and technical support for execution was provided by its own engineering division. While implementation was done by the project office, monitoring was done by the BAEC through the inter-agency meetings. During the initial stage of implementation, meetings were held fortnightly among the consultants, contractors, suppliers, experts and the representatives of the Commission, and the project office. Such meetings would address all implementation issues especially those which required concerted action. These meetings were sometimes attended by representative of the Planning Commission (PC) and the Implementation, Monitoring and Evaluation (IMED).

The Planning and Development Division of the Bangladesh Atomic Energy Commission (BAEC) used to monitor the project and submit to the Secretary of the sponsoring ministry a monthly Inspection Report on the progress of the overall project and each of its components. The

report would list the existing problems and describe the actions taken on earlier decisions. Copies of such report were usually endorsed for action to all concerned including the relevant ministries namely i) the Ministry of Energy & Mineral Resources ii) the ERD iii) the Ministry of Finance iv) the Planning Ministry and v) the IMED.

Implementation Experience

i) Non-availability of foreign assistance

Nuclear science and technology is a high-tech area. Research and development in this area involves high cost. In this field foreign aid is scanty. Unlike other countries in the region, Bangladesh would not find a donor willing to transfer the technology. For this project, Bangladesh had to count only on its own resources. If it were a donor assisted project, availability of fund might not have been a problem; but this project had problems with funding. In fact, a reason for prolonging the project period was scarcity of resources of the government of Bangladesh.

ii) Non-availability of resources

Success of a project requires due consideration about timely availability and efficient use of resources. Resource were not available timely. This is evident from the gaps in the PP provision and actual fund release. Again the utilization rate of facilities created is yet to reach the optimum level. Services rendered and research conducted are minimal. While most of the current budget is spent

on Salary and Allowances, many of the physical facilities remain heavily underutilized. If the project were thoroughly scrutinised at the very outset from the point of availability and efficient use of resources, and if the attempts were confined only to areas and facilities which could be timely and properly developed and efficiently run and used, the project could be spared many pull-backs and vacillations and would have witnessed a modest beginning with fair amount of success.

iii) Shifts in design, content, time and resources

The project was designed with less than required amount of consideration about time and resources. None of the project component could be completed as per schedule. For example, Phase-I of the project was scheduled to be completed by 1978. This was rescheduled for 1981. The completion date was shifted further until June, 1985. The project was declared complete in June, 1986 even though some of the project work remained incomplete. In fact, some work is still going on in the year 1989. A prime reason for such rescheduling was inadequate fund provision. Since it is a GOB funded project, the inadequacy of funding should have been considered and provided for in the PP in terms of longer implementation period or a smaller project size or otherwise.

The scheme and content of the project continued to shift directions. Implementation of such a project was like hitting a moving target. This has been reflected in revising of the PP so many times in so many ways. The size of the project continued to change until it

was reduced to a minimum. On the other hand, the cost of the project increased over time.

iv) Absence of required skill

Basically the project was supposed to concentrate on research and development besides providing essential services in the field of nuclear technology. The project aims at reducing a big knowledge gap and technology lag. This was supposed to be realized through undertaking of research in basic and applied areas. This could open up new vistas of economic activities. Thus, the AERI is a unique project of its kind. Being first of its kind, there was not much professional or management skill in this area to draw from.

v) Delay in signing of Non-Proliferation Treaty (NPT)

The Commission (BAEC) signed a contract in October, 1979, with the General Atomic Company of the USA for supply of a BMWT TRIGA Mark-II Research Reactor. International convention requires signing of Non Proliferation Treaty (NPT) for co-operation in the field of nuclear technology. Following other countries of the region like India and Pakistan, Bangladesh also remained a non-signatory to the treaty. This delayed supply and installation of the Reactor. Needless to mention, Bangladesh obtained supplies and assistance only after she signed the non-proliferation treaty (NPT).

vi) Problem of custom duty and sales tax

As a project of the STR division, of the Ministry of education,

the project was previously exempted from the CDST. Later on, when the sponsorship was shifted to the Energy Division, of the Ministry of Energy & Mineral Resource, this privilege could not be protected well.

vii) Delay in delivery of site

Delivery and development of site was delayed because even though the land was acquired and the compensation money was placed by the requiring body (RB) with the appropriate authority, the list of the assesseees was not completed and the compensation money could not be handed over to the owners of land. As a result, they resisted possession of the site by the RB and construction thereon. The work naturally had to be delayed for sometime in order that the issue was settled and the compensation money arranged for.

viii) Absence of delegation of power

The project office was vested with the tasks of implementation of the project while the Planning and Development (P&D) division of the Bangladesh Atomic Energy Commission constantly monitored the progress of work. It appears that the project office had little delegation of authority for meeting unforeseen circumstances in day-to-day activities. Even little maintenance and repair work had to wait long for approval when the amount involved exceeded Tk. 10,000 (little over US\$ 300). This is the maximum the project Director could spend, irrespective of the degrees of necessity, in anticipation of later approval. He could employ a staff, for a maximum period of one week.

ix) Archaic financial rules

Financial Rules have been used and interpreted in such a way that it has become a norm to accept the lowest in a tender/quotation. The fact that differences in amount reflect differences in qualitative dimensions of the ultimate results/performance is very often lost sight of. Sometimes decision process had to be slowed down for resolving the difficulties surrounding lowest tender/bid and the need for technological soundness. In some cases this aspect could not be duly considered and some equipment went out of order causing further claim on resources for repair or replacement.

Conclusion: In general, the design of a project should be based on proper appreciation of the project within the broader national perspective and deeper understanding of the implications of commitments of material and human resources. It should also duly provide for unforeseen contingencies, in order that implementation is not disrupted significantly even though the changing circumstances make modifications inevitable. Institutional capability for implementation is also influenced by such factors as rules, regulations, procedures, delegation of authority etc. This is an area which deserves particular attention.

To be specific this project was supposed to build and strengthen infrastructure for development by adding to and opening up frontiers of our knowledge and skill in high-tech areas. Therefore,

the project should have been considered in a broader perspective of time,resources,political commitment and the ultimate benefits that may accrue to the nation. Lessons of experience tell us that proper appreciation of the scheme at the policy level would have led to certain hard decisions such as 'engaging in fewer activities but doing them completely' and 'providing for them adequately' and employment fewer people but arranging for getting the best out of them' etc.

Chapter VI

Synthesis of Implementation Experience

Implementation experiences of the three project that were studied revealed some common features in their implementation process although the magnitude varied from case to case. Below we list a few common causes attributed to delay in the implementation process of the projects. The categorization "Major" reflects that the factor was critical in the implementation process and one of the prime sources of delay; "Minor" reflects factors less important in the implementation process. The common causes of delay in each of the projects are presented in a matrix form and we attempt at elucidation of some basic causes in the following paragraphs.

Causes of Delay

Causes	19 Upazila Health	AERI Savar	Dairy and Cattle Farm
Faulty design	Minor	Major	Major
Absence of authority	Major (10 Units)	Minor	Major
Project revision	N.A.	Major	Major
Release of fund	Minor	Major	Major
Acquisition of land	Minor (4 Unit)	Minor	Major
Delivery of site	Minor (one unit)	Minor	Major
Floating of tender	Major	Major	Minor
Insurance of work order	Minor (4 Units)	Major	Minor
Custom duty and sales tax	Minor	Major	N.A.
Water supply	Major	Minor	Major
Electrical connection	Major	Minor	Major

N.A. Not applicable.

Faulty project design impeded implementation of all the three project - though to varying degrees. In case of Dairy and Cattle Breeding Farm, the fault was as fundamental as omission of provision for electrification and provision of 600 sft of godown space for a farm envisaging breeding and rearing of cattle in hundreds. This necessitated major revision of the project. In case of the AERI, the design fault lay in cramming the initial project with too many components rendering the financial provisions totally inadequate. The result was that implementation of the first phase consumed so much time and resources that the second phase of the project was never considered a serious proposition. Design fault of the 19-UHCs project was, however, minor in nature. It related mainly to the failure to anticipate load factor of electric connections to the UHCs and resultant failure to provide for installation of transformers in most centres. Nevertheless, this resulted in delay in completion of certain sub-projects.

Like the 19 Upazila Health Complex, the project director of AERI exercised limited power in implementation. In the case of AERI the project Director only had the power to sanction Tk.10,000. To spend above Tk.10,000, he needed prior approval and in the approved items, the maximum amount of deviation allowed was Tk.25,000. He could employ a staff, in times of necessity, on 'no work no pay basis' for a maximum period of one week. In case of 19 Upazila Health Complex, the role of BPDU was of intermediary rather than that of an arbiter. The result was that most of the vital questions like price escalation, excess work, question of non-supply of materials to the contractors which

impeded timely implementation of the project had to be addressed under the usual procedure applicable to similar works executed by Public Works Department. Stoppage of supply of material to the building contractors of the 19-UHC sub-projects served a severe jolt to the process of implementation of the project. The contractors competed in the tenders with the assumption that certain basic building materials would be supplied by the PWD but that did not happen in some cases.

The project, AERI initially was sponsored by the Science and Technology Division. Later, the project was moved to the sponsorship of the Science and Technology Research (STR) Division of the Ministry of Energy and Mineral Resources. As a project of the STR division of the Ministry of Education, the project was exempted from the C.D.S.T. But later when the sponsorship was shifted to the Energy Division, of the Ministry of Energy and Mineral Resources, this privilege could not be protected well. For the two other projects, this shifting of the sponsoring agencies did not happen during the implementation period.

19 Upazila Health Complex, in fact, comprised 19 separate sub-projects each one with features (pertaining to implementation) divergent on many accounts. Only one sub-project, health complex of Alfadanga in Faridpur, encountered problems in transportation of construction materials. Other sub-projects of the 19 Upazila Health Complex and the two other projects did not meet such problem in implementation.

Land acquisition was a major problem for the Dairy and Cattle

Breeding farm at Faridpur. Inter-agency tug of war delayed the land acquisition work to such an extent that fate of the project was put at stake at one stage. Except one unit of 19 Upazila Health Complex, the two other project did not face serious problem in land acquisition.

For the project AERI, GOB needed to sign an agreement with IAEA to solicit necessary technical help in connection with the installation of atomic reactor. This agreement helped the government in gaining the UNDP support in training of manpower and procuring of materials.

Among the three projects, two were financed out of GOB own money viz Atomic Energy Research Institute and Dairy and Cattle Breeding Farm, Faridpur. The project 19 Upazila Health Complex was financed through a credit agreement with IDA.

Chapter VII

Suggested Measures

1. It is imperative at the preparation stage of the project to outline clearly the critical tasks of the project and enumerate the various activities in a sequence so that Project Implementation Office (PIO) can, at the very outset of the project activities, foresee the consequences of delay in critical tasks. This endeavour may be facilitated through inclusion of Logical Framework Approach where a clear vision of input/output/purpose/goals are discernible. Besides, major itemwise schedule of physical work with bar diagram for small project and in the case of large project in terms of net-work analysis such as Critical Path Method (CPM) may obviate major drawbacks in the implementation stage. Among the three projects we studied, only 19 Upazila Health Complex provided a bar diagram. Construction of diagram of CPM is not a difficult job if one possesses a clear perspective of the different activities that a project needs to fulfil for attaining its objectives. Thus, for effective implementation of the project and to identify the various loopholes in the implementation process, bar diagram/precedence diagram or CPM may integrate project planning and implementation at an earlier stage of project formulation.
2. Two of the projects under study necessitated revision in their basic areas because of faulty design. The Dairy and Cattle Breeding Farm at Faridpur had excluded electrification work while

the AERI project suffered from inclusion of too many components at too little cost estimate. Therefore training in project management for officials who are responsible for initiation of the projects can remove such weaknesses with regard to project.

3. While negotiating development credit agreements with the donors, the government may try to avoid imposition of too many preconditions of credit effectiveness. Appointment of planning and design consultants for such a simple project as 19-UHCs project should not have been a precondition of credit effectiveness of the Development Credit Agreement (DCA). Designing the UHCs did not require such skills as were not available with the implementing agencies of the project.
 4. The utility of a project implementation office (PIO) lies in providing a focal point to the entire implementation process. The PIO has to play a central role in the project implementation effort. Unless the PIO is vested with adequate financial and administrative authority it cannot play an effective role.
 5. Inadequate allocation of fund in the ADP is another reason for delay in implementation. The implementation of Dairy and Cattle Breeding Farm at Faridpur and AERI suffered initially owing to poor allocation of resources in ADP. Inadequate allocation of resources lengthen the project implementation period with subsequent upward revision of the project in order to meet the
-

inflated cost of the various items. It is therefore imperative that only projects for which adequate resources can be provided in the ADP are included in the development Plan. Inclusion of too many projects in the ADP may result in thin spreading of resources.

FOOTNOTES

1. Warren C. Baum and Strokes M. Tolbert, Investing in Development, Lessons of World Bank Experience. (New York: Oxford University Press, July 1985) p.5.
2. Albert O. Hirschman, Development Projects Observed. (Washington D.C.: The Brookings Institution, 1987), p.1.
3. J. Price Gittinger, Economic Analysis of Agricultural Projects. Revised Edition. (Baltimore: John Hopkins University Press, 1982), p.5.
4. Warren C. Baum, Op.Cit. p. 334.
5. Giandomenico Majone and Aaron Wildavasky, "Implementation as Evolution" in Jeffery D. Pressman and Aaron Wildavasky, Implementation. Third Edition. (Berkeley: University of California Press, 1984) p.165.
6. Ibid., p.171
7. P.K. Doraiswamy, "Complexities in Project Implementation", The Hindu, February 11, 1988, p.18.
8. Dennis A. Rondinelli, "Why Development Projects Fail: Problems of Project Management in Developing Countries", Project Management Quarterly, Vol. 7 (March 1976) p.10.
9. Ibid., pp. 11-13.
10. Arnold M. Ruskin and W. Eugene Estes, What Every Engineer Should Know About Project Management, (New York: Marcel Dekker, 1982), p.3.
11. Government of the People's Republic of Bangladesh, The Two Year Plan, 1978-80. (Planning Commission, Dhaka). September, 1978, p.4.
12. Government of the People's Republic of Bangladesh The Third Five Year Plan, 1985-90. (Planning Commission, Dhaka) December, 1985, p.27.

13. Ibid., p.27.
14. Ministry of Finance, Finance Division, "Procedure for Release/Utilization of funds", 1976, Memo-No.MFD/Dev-1/Bt.1/2M(7)/76/262, Dhaka, Feb, 14, 1976 and No.MFD/Dev-I/Bt-1/2M(7)/76/295, Dhaka, Feb.20, 1976.
15. _____ "Procedure for Utilization/Release of Reimburable Project Aid, + 1979. Memo.No.MFD-1/Bt.1/2M(1)77-78/104(50), Dhaka, Jan.18, 1979.
16. Ibid.,
17. Government of the People's Republic of Bangladesh, Flow of External Assistance into Bangladesh, (External Resources Division, Dhaka December, 1987) p.6.
18. Centre for Development Research Bangladesh, The Utilization of Project Aid in Bangladesh, Volume One, (Dhaka, Bangladesh, May 1988). Ch 1.p.6.
19. Government of the People's Republic of Bangladesh, Ministry of Planning, Memorandum for the Bangladesh Aid Group 1989-90, (Dhaka, March, 1989). p.132.
20. J.Priee Gittinger, Economic Analysis of Agricultural Projects, Revised Edition, (Baltimore, Johns Hopkins Press, 1982), p.371.
21. Skylark Chadha, Management of Industrial Projects in Bangladesh, (SIDA, November 1984), pp.221-154.

SELECT BIBLIOGRAPHY

Ahmed, Shahabuddin, Project Implementation: A critical Analysis of the role of the fund release procedure, Paper submitted to BPATC in partial fulfilment of the requirement of successful completion of the 5th ACAD Course held during 01 September - 01 December, 1987.

Ahmed, Mesbahuddin, Project Monitoring, Training workshop on Project Preparation and Project Monitoring, organized by Planning Cell, Ministry of Irrigation, Water Development and Flood Control, Govt. of Bangladesh.

Baum Warren C and Tolbert M. Strokes, Investing in Development, Lessons of World Bank Experience, Oxford University Press, July, 1985.

Centre for Development Research Bangladesh, The Utilization of Project Aid in Bangladesh. Volume One, Dhaka, May 1988.

Conyers Diana and Hills Peter, An Introduction to Development Planning in the Third World, John Wiley & Sons, July 1986.

Doraiswamy. P.K. "Complexities in Project Implementation", The Hindu, February 11, 1988.

Gittinger Price Jr, Economic Analysis of Agricultural Projects, Revised Edition, Baltimore, Johns Hopkins Press, 1982.

Hirschman, Albert O, Development Project Observed, Washington D.C. The Brookings Institution, 1967.

Rondinelli, Dennis A., "Project as Instrument of Development Administration", Paper presented at APDC/ADB Regional Training Workshop on Project Management held at Kuala Lumpur during 26 November to 01 December 1984.

_____, "Why Development Projects Fail ? Problems of Project Management in Developing Countries," Project Management Quarterly, Vol 7, March 1976.

_____, "International Requirements for Project Preparation: Aids or obstacles to Development Planning"? Journal of the American Institute of Planners, Volume 42, Number 3, July 1976.

Pressman L and Wildavsky (ed), Implementation, Third Edition, Berkely, University of California Press, 1984.

Ruskin M. Arnold and Ester W. Eugene, What Every Engineer should know about Project Management, New York, Marcel Dekker, 1982.

Sirajuddin, Muhammad, (ed) Project Management: A compilation of lecture materials, Project Implementation Bureau, Dhaka 1980.

Skylark Chadha, Management of Industrial Projects in Bangladesh, SIDA, November 1984.

Public Documents:

Government of the Peoples Republic of Bangladesh, Planning Commission, Ministry of Planning. The First Five Year Plan, 1973-78, November 1973.

_____, Planning Commission, Ministry of Planning. The Two Year Plan, 1978-80, September 1978.

_____, Planning Commission, Ministry of Planning. The Second Five Year Plan, 1980-85, May 1983.

_____, Planning Commission, Ministry of Planning. The Third Five Year Plan, 1985-90. December 1985.

_____, Planning Commission, Ministry of Planning. List of Projects of Third Five Year Plan, 1985-90. April, 1986.

_____, Ministry of Finance, Finance Division, "Procedure for Release/Utilization of funds". 1976, Memo-No. MFD/Dev1/2M(7)/76/262, Dhaka, Feb, 14, 1976 and No. MFD/Dev-1/Bt-1/2M(7)/76/295, Dhaka. Feb, 20, 1976.

_____, Ministry of Finance Division, "Procedure for Utilization/Release of Reimbursable Project Aid", 1979. Memo No. MFD-1/Bt.1/2M(1)/77-78/104(50), Dhaka, Jan. 8, 1979.

_____, Ministry of Finance and Planning, Finance Division, (D.W.)c "Procedure for Utilization/Release of Funds", 1982-83". Memo. No. MFD-1/Bt-1/Misc.1(1)/82-83/1(50) Aug. 3, 1982.

_____, Ministry of Finance and Planning, Finance Division, (D.W.), "Delegation of Financial Powers for the Execution of Development Projects. Memo. No. MFD-1/Bt-1/Misc.-1(31)/82-83, Dhaka, Aug. 3, 1982 and No. MFD-1/Bt-1/Mis/96/83-84/23(50) Dhaka, Aug. 16, 1983.

_____, External Resources Division, Flow of External Assistance into Bangladesh, December, 1987.

_____, Memorandum for the Bangladesh Aid Group 1989/90, Dhaka, March, 1989.

QUESTIONNAIRE

(For Project Managers/Administrators and officials involved in implementation of the Project)

(The answer of the asterisk marked questions will be incorporated through the Project Proforma)

*1. Name of the Project :

*2 . Date of Commencement

As per project document

i) Original :

Revised :

ii) Actual :

*3. Date of completion

Original :

Revised :

Actual :

*4. List major civil construction of the project.

*5. Identify the project components those were completed before schedule.

6. Identify the projects components which were completed after the targeted schedule. List the components in their proper sequence and try to advance reasons for such delays.

7. Please discuss the role of Project Implementation Office in implementing the project - the financial power and administrative authority of the Project Director in carrying out the day to day affairs in implementation of the project.

8. What were the institutional linkages in the implementation process? Did it hamper or help in the implementation process? Please indicate the community participation and the role of local administration in implementation.

9. Do you think that monitoring mechanism smoothly worked ?
Do you observe any tangible improvement in the implementation of the project after inspection by the concerned agencies/ Division ?

Name and designation
of the respondents.

Name of the Interviewer