Government of the People's Republic of Bangladesh
Ministry of Water Resources
Bangladesh Water Development Board
Water Resources Planning Organization

COMPARTMENTALIZATION PILOT PROJECT, TANGAIL

Final Phase

QUARTERLY ACTIVITIES REPORT 1

January 1997

LAHMEYER INTERNATIONAL GMBH, Germany

in Association with

Haskoning - Royal Dutch Consulting Engineers & Architects, The Netherlands
Consultants for Development Programmes (CDP), The Netherlands
Development Design Consultants Ltd. (DDC), People's Republic of Bangladesh

Donors:

Directoraat Generaal Internationale Samenwerking, Government of the Netherlands

and

Kreditanstalt für Wiederaufbau, Federal Republic of Germany

2

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COMPARTMENTALIZATION PILOT PROJECT

Office of the
PD/Superintending Engineer
BWDB, Tangail

Memo No.PD/CPP/P-8/71/A(2) Date: 18 January 1997

To

i) The Director General
Water Resources Planning Organization
Dhaka

ii) The Chief Engineer
Central Zone
WDB, Dhaka

Sub: **Quarterly Activities Report 1 (October - December 1996)**

Sir,

I have the honour to submit herewith the Quarterly Activities Report 1 (October - December 1996) on Compartmentalization Pilot Project, Tangail for favour of your kind information and disposal. This is the first report which is issued under the final phase of CPP, which has started from 1 October 1996. The report has been prepared based on the activities made the period during October-December 1996 and reflects only the ongoing activities. More detailed analysis and planning for the final phase of the project, will be described in the Inception Report (final phase), expected in the month of March 1997.

Yours obediently,

Enclo: - Activities Report 2 copies
- Distribution list

(Salahuddin Md. Humayun)
PD/Superintending Engineer
Compartmentalization Pilot Project
BWDB, Tangail

Memo No.PD/CPP/P-8/71/A(2)/2 date: 18 January 1997

Copy : - Team Leader, CPP Consultant for favour of kind information & necessary action.
- Executive Engineer, CPP Division, BWDB, Tangail

(Salahuddin Md. Humayun)
PD/Superintending Engineer
Compartmentalization Pilot Project
BWDB, Tangail

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- Team Leader, Early Implementation Project, Dhaka
- Team Leader, Northeast Regional Project, Dhaka
- Team Leader, Khulna-Jessore Drainage Rehabilitation Project, Dhaka
- Team Leader, Meghna Estuary Study, Dhaka

ABBREVIATIONS

AARC - Adjacent Area Representative Committee
ADAB - Association of Development Agencies in Bangladesh
ATAP - Annual Technical Assistance Programme
AEP - Aquaculture Extension Programme
BELA - Bangladesh Environmental Lawyers Association
BRAC - Bangladesh Rural Advancement Committee
BRDB - Bangladesh Rural Development Board
BS - Block Supervisor
BUET - Bangladesh University of Engineering & Technology
BWDB - Bangladesh Water Development Board
CC - Chawk Committee
CPP - Compartmentalization Pilot Project
CPT - Core Planning Team
CWMC - Compartmental Water Management Committee (PC)
DAE - Department of Agricultural Extension
DC - Deputy Commissioner
DEM - Digital Elevation Model
DGIS - Directoraat Generaal Internationale Samenwerking
DOF - Department of Fisheries
DWA - Deep Water Aman
EIA - Environmental Impact Assessment
EMG - Embankment Maintenance Group
GoB - Government of Bangladesh
HYV - High Yielding Variety
KfW - Kreditanstalt für Wiederaufbau
LCS - Landless Contracting Society
LGED - Local Government Engineering Department
M&E - Monitoring and Evaluation
MoU - Memorandum of Understanding
MoWR - Ministry of Water Resources (formerly MIWDFC)
NAS - Needs Assessment Survey
NAI - Needs Assessment Intervention (matrix)
NGO - Non-Governmental Organization
O&M - Operation and Maintenance
PD - Project Director
PC - Project Council (CWMC)
RNE - Royal Netherlands Embassy
SC - Sub-Compartment
SCWMC - Sub-Compartmental Water Management Committee
SMO - Subject Matter Officer
SSS - Society for Social Services
SRP - Systems Rehabilitation Project
SWMC - Surface Water Modelling Centre
TAO - Thana Agricultural Officer
TAPP - Technical Assistance Project Proforma
TNO - Thana Nirbahi Officer
ToR - Terms of Reference
UNDP - United Nations Development Programme
UP - Union Parishad
WARPO - Water Resources Planning Organization
WUG - Water Users Group
XEN - Executive Engineer

COMPARTMENTALIZATION PILOT PROJECT (CPP) PHASE-II

QUARTERLY ACTIVITIES REPORT 1

October - December 1996

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1 PREFACE

The completion of Compartmentalization Pilot Project (CPP), Tangail first phase was over by the end of September, 1996 and most of the consultants were replaced by a new team as per recommendation of the Reformulation Mission's Report (October 1995). The new team joined the project from September 15, 1996, fifteen days being an overlapping period between members of the two teams for a smooth transition. On the joining of the new team, familiarization with the project activities was necessary and the new team picked up the theme and essence of CPP.The second phase will encompass the period from October 1996 to June 2000.

As per the project proposal, the Inception Report has to be submitted within six months of the second phase wherein the activities of the different disciplines will be planned for implementation. Since, the Inception Report has not yet been finalized, it is not proper to publish the traditional quarterly progress report as such. Hence, the quarterly progress report has been replaced by a "quarterly activities report". The quarterly activities report covering the period from July to September 1996 was not published as the Completion Report of the First Phase has covered this period.

A special study, commissioned by the German Minister for Economic Cooperation and Development, is under preparation. The objectives of the study were mainly focussed towards the effectiveness of government regulations regarding land acquisition and towards the perception of the local people regarding the project. A final draft report of this special study is expected in January 1997.

During this period, the preparation for the Flood Damage Assessment Model (FDAM), an extension of the Flood Management Model (FMM) has been completed. A seminar presentation was held on November 14, 1996 at the EGIS-building in Dhaka where a wide range of projects, institutions, organization and NGO's were invited to attend.

Progress monitoring and impact indicators identified by the earlier consultants team (First Phase) were thoroughly reviewed and modified and a new set of indicators have been developed alongwith their technical sheets explaining the rationale and usefulness of data which awaiting finalization.

Furthermore a thorough in depth review is taken place from the institutional/gender point of view, as well as in the fields of bioresources, environment, quality control, interdepartmental cooperation for the period covering the final phase of the project.

The Memorandum of Understanding (MoU) regarding financing of the CPP, Tangail between GOB and the Donors (DGIS and KfW) has been signed on 12.12.1996.

Salahuddin Md. Humayun
Project Director

Armand J.M. Evers
Team Leader CPP

2 DETAILS OF CONSTRUCTION AND ALLIED ITEMS

2.1 Construction: 1996-97

2.1.1 General

For the construction season during FY 96-97, the construction activities are centered mainly around 33 new works, including 2 works under FFW programme. Tenders invited for all new works and work order issued for 13 works. There are 19 carried over works, out of which 3 have been taken up and 1 has been completed.

2.1.2 Work plan need and progress

From Oct/96 to June/97, 33 new works and 19 carried over works are planned for execution. Out of which 1 has been completed during the quarter (Table 2.1 and figure 2.1 and 2.2)

Table 2.1 Progress of planned works from Oct/96 to June 97 and completed works during the fourth quarter 1996

Cluster	Name of work	Tendered value Tk. LK	Status of work	Remarks
	New Works			
IV	Deojan regulator	47.93	work awarded	work will be started soon
IV	Burburia WCS	24.40	-do-	-do-
V	Drain of Tangail Town	381.80	-do-	-do-
II	Char Kagmara WCS	6.87	-do-	-do-
IV	Bara Atia WCS	8.53	-do-	-do-
IV	Berabuchna WCS	14.75	-do-	-do-
IV	Birpushia WCS	22.64	-do-	-do-
1b	Pachkahonia PC	2.18	-do-	-do-
IV	Kumulli GPC	10.35	-do-	-do-
IV	Khagjana GPC	10.39	-do-	-do-
IV	Aloa Bhabani GPC-I	5.78	-do-	-do-
IV	Aloa Bhabani GPC-II	6.51	-do-	-do-
IV	Aloa Khal	10.78	-do-	-do-
IV	Berabuchna - Kumeri khal	3.17	-do-	-do-
IV	Baruha Khal	10.27	-do-	-do-
IV	Deojan Khal	2.00	-do-	-do-
IV	Indro Belta Khal	1.09	-do-	-do-
IV	Kumulli khal	0.62	-do-	-do-
VI	Baghil Ainapur Soabeel Khal	0.43	-do-	-do-
VI	Moishananda - Deldar char Road	9.91	-do-	-do-
VI	Beel Muril Foot Bridge	15.79	-do-	-do-
VI	Char Durgapur Foot Bridge	21.47	-do-	-do-
VI	Bara Bashalia Road	2.26	-do-	-do-
VI	Choto Bashalia to Gala Purbapara Road	1.30	-do-	-do-

Cluster	Name of work	Tendered value Tk. LK	Status of work	Remarks
VI	Road from Senergagorjan bridge to Faliarghona Madrasha	17.00	-do-	-do-
VI	Road from Galachar Pry School to Muhammad Ali's house	5.08	-do-	-do-
VI	Road from Beel Muril to Chowdhury Malancha	7.27	-do-	-do-
VI	Road From Beel Muril to Deldar Char	11.33	-do-	-do-
1b	Fatehpur culvert	2.87	-do-	-do-
1b	Fatehpur Irrigation Inlets (3 nos.)	2.12	-do-	-do-
III	Khudirampur khal	4.19	10.6.96	10% completed
	Lauhajang river	1546 MT wheat	PIC formed	-do-
	Gala khal	354 MT wheat	PIC formed	-do-
	Carried Over Works			
III	Khudirampur WCS	0.23	Carried over work	95% work done
III	Sarutia Box culvert	17.14	-do-	91% work done
II	Bararia gated pipe culvert (GPC)	5.02	-do-	Completed
II	Enayetpur WCS	32.27	-do-	Completed
II	Sadullapur regulator	57.60	-do-	99% work done
II	Kandila bridge	25.45	-do-	75% work done
1b	Chillabari - Sadullapur SC embkt.	Partly allotted	-do-	50% work done
1b	Pardighulia SC embkt.	5.95	-do-	75% complete
II	Dharerbari - Dist. SC embkt.	Partly allotted	-do-	85% work done
II & III	Salina - Dapnazar comp. embkt.	89.97	-do-	92% work done
II	Rasulpur-Salina Comp. Embkt.	34.20 + 1 reach unallotted	-do-	80% work done
II	Gala - Rasulpur comp. embkt.	11.57	-do-	80% work done
1b	Jugini Khal	-	-do-	Work of land possession
1b	Rampal khal	-	-do-	Work to be restart soon
II	Bamni khal	3.92	-do-	35% work done
II	Dharerbari khal	1.03	-do-	75% work done
III	Gharinda - Jalfai khal	14.13	-do-	25% work done
II	Rasulpur khal	5.32	-do-	80% work done
Misc.	Boundary pillars	2.01	-do-	Completed

2.1.4 Design Status

Design status of 33 new works and 19 carried over work are shown in Table 2.2.

Table 2.2: Design status of works of 1996-97

Type of work	Number of works		Design received (Nos.)		Design awaited (Nos.)	
	New	Carried	New	Carried over	New	Carried over
Structures	16	6	15	6	1	-
Rivers/khals	10	6	10	6	-	-
Embkt./road	7	6	6	5	1	1
Miscellaneous	-	1	-	1	-	-
Total	33	19	31	18	2 ✓	1 ✓

2.1.5 Survey and tests

All surveys related to the design of physical works for FY 96-97 have been completed, but additional surveys will continue for the local adjustments of designs and for tuning.

All tests related to the design of physical works for FY 96-97 have been completed, tests related to quality control and environment will be done continuously during implementation of works.

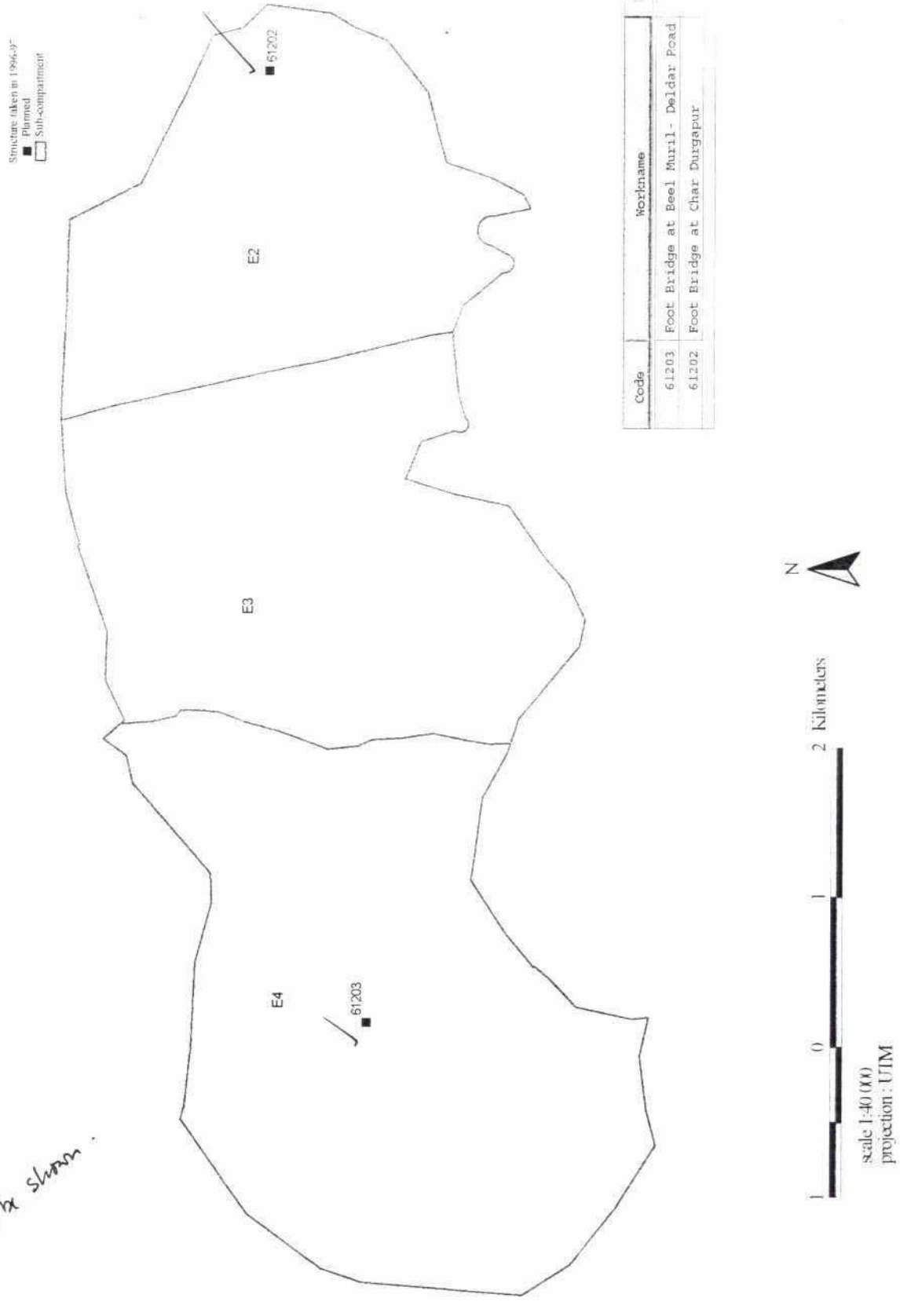
2.1.6 Tender and work order

Tenders for all works of 1996-97 have been completed. Awards of work orders have been issued for some works and others are in process (shown in Table 2.3)

Table 2.3: Status of tenders and work orders

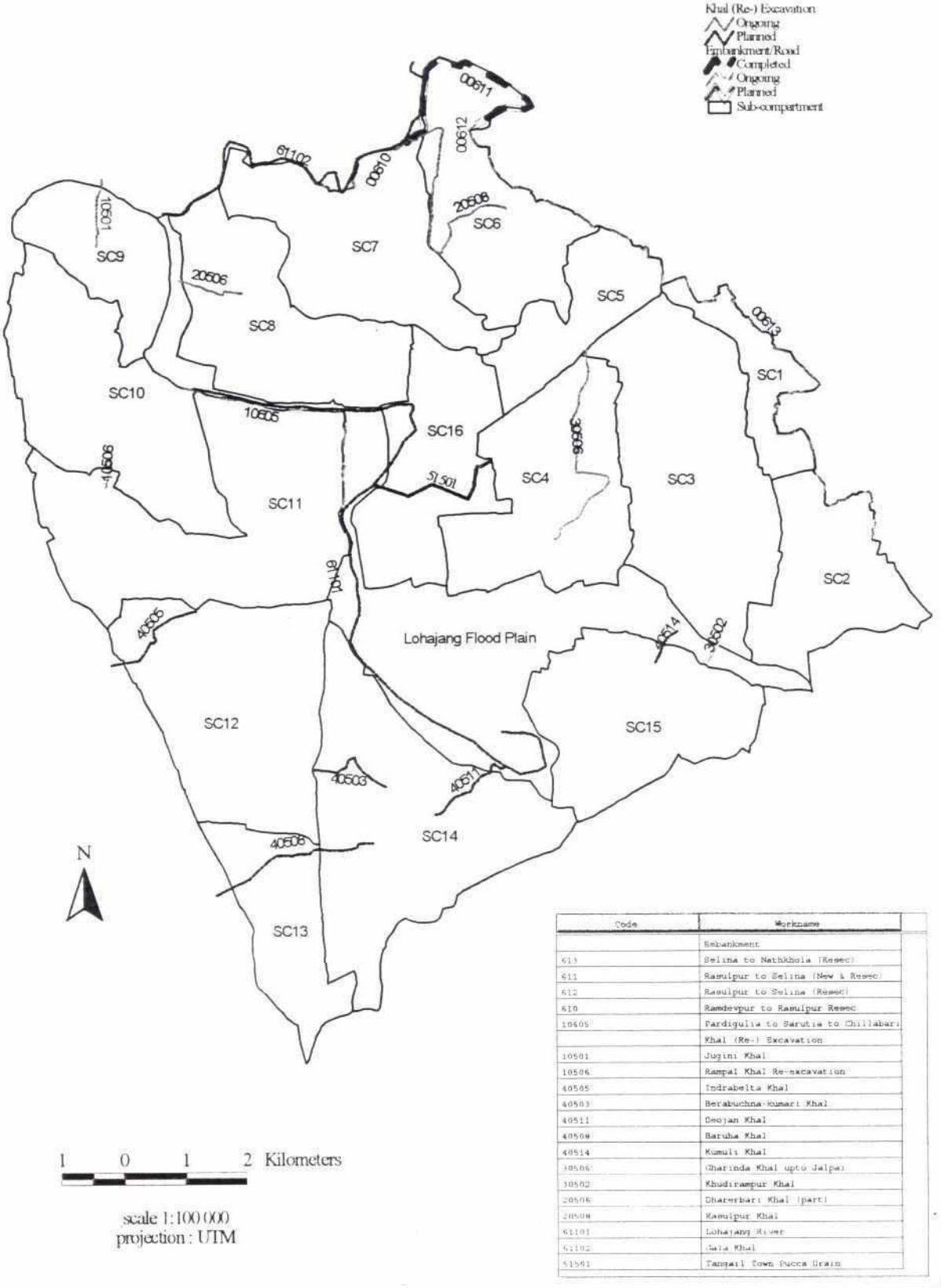
Type of work	No. of works		Tender invited		Work order issued		Work order awaited	
	New	Carried over	New	Carried over	New	Carried over	New	Carried over
Structure	16	6	16	6	8	6	8	-
River/khals	10 including 2 FFW	6	8+2 (not required)	6	1	6	7	-
Embkt./road	7	6	7	6	4	5+1 (part)	3	1 (part)
Misc.	-	1		1		1	-	-
Total	33	19	3+2 (not required)	19	13	18+1 (part)	18	1 (part)

Figure 2.1: Work programme 1996-97 adjacent area: physical progress (structure) at Dec. 31, 1996



Project area to be shown.

Figure 2.2: Work programme 1996-97: physical progress (river/khal/embankment/road) at December 31, 1996



Code	Workname
	Embankment
613	Selina to Nathkhola (Resec)
611	Rasulpur to Selina (New & Resec)
612	Rasulpur to Selina (Resec)
610	Ramdevpur to Rasulpur Resec
10605	Pardigulia to Sarutia to Chillabari
	Khal (Re-) Excavation
10501	Jugini Khal
10506	Rampal Khal Re-excavation
40505	Indrabelta Khal
40503	Berabuchna-Kumari Khal
40511	Deojan Khal
40508	Baruha Khal
40514	Kumuli Khal
30506	Gharinda Khal upto Jalpa
30502	Khudirampur Khal
20506	Dhareribari Khal (part)
20508	Rasulpur Khal
61101	Lohajang River
61102	Gala Khal
51501	Tangail Town Pucca Drain

Figure 2.3: Clusters & Sub-compartments

Compartmentalization Pilot Project Tangail

2.2 Land acquisition and compensation payment status

Land acquisition is one of the key requirements of any structural project and has social, legal and economical consequences. The whole process of land acquisition is complex and involves many steps. Complaints regarding serving of notices, land cost estimations, payment of compensation are often directed to project management. Under the existing GOB system, a project like CPP has very limited role to play in respect of land acquisition. The project is involved only in:

- placing request for land acquisition
- payment of compensation money to the district administration as per estimates prepared by the district administration
- possession of land from the district administration.

For all other steps and procedures, different departments and ministries are involved. The status as on Dec. 31, 1996 is shown in Table 2.4.

Table 2.4: Land acquisition status as on Dec. 31, 1996

LA steps	Responsible	Area in hectares (revised)	
		Action taken till 31.12.96	Pending till 31.12.96
Submission to DC	Project	186.172	-
Clearance by DLAC	District administration	159.140	27.032
Submission to ministry	Do	159.140	-
Ministry's clearance	Do	153.424	5.716
Estimate received	Do	92.138	61.268
Fund placement	Project	92.138	-
Possession received	Project	90.492	1.646

Since inception, the project has paid Tk.968.12 lakh for the land cost and related compensation payment. Out of which Tk.508.00 lakh has been deposited to D.C. in advance.

2.3 Operation and maintenance

2.3.1 Gates, related accessories and structures

Gates with related accessories installed in 51 structures and 50 structures functioned properly during the last flood season. Gates of more 3 completed structures are required to be installed. Painting and greasing of those gates of 51 structures have already been done in 1995-96. Painting and greasing of gates are necessary in every year. Another 18 structures (bridges and clusters) have been completed, but no gates are necessary.

2.3.2 Involvement of local groups in earth works

Status and Progress

Total 17 groups of EMGs are working from Gala to Silimpur and Khaladhari to Dhapnajar embankment. Total length is 46.50 km. Total members of EMGs are 93. Contract period is 6 months. 2 groups are working 3 times, 7 groups 1 time and remaining 8 groups 2 times. Contract of 12 groups will be finished by end of Feb/97 and contract of remaining 5 groups will be finished by 15th April/97.

From field observations, it was noticed that all the EMG members perform their job satisfactorily and the sections of the embankment remained in good shape even during the rainy season.

2.3.3 Engagement of gate operator

During the last flood season gate operators were appointed for 50 structures. They have done their duties properly under the guidance of the structure committees.

2.4 Food For Work (FFW)

During 1996-97 there are two works under FFW programme. One is reexcavation of Lohajang river (upper part - 18.56 km) and other is reexcavation of Gala khal (7.90 km). Quantity of wheat requirement is 1546 metric ton and 354 metric ton respectively. Allotment of wheat for 1996-96 is 1546 MT and 354 MT respectively.

Works have not been started upto Dec. 31, 1996. They are planned to start in the first week of January.

2.5 Landless Contracting Society (LCS)

During 1996-97, 5 full works and part of 4 works are earmarked for LCS (shown in Table 3.5). Works have not yet been allotted.

Type of work	Full work (No.)	Part work (No.)	Remarks
Resectioning of Roads	2	3	Works are not allotted yet
Reexcavation of khals	3	1	Works are not allotted yet
Total	5	4	Works are not allotted yet

2.6 Quality control and supervision of executed works

During the quarter supervision of the construction of 2 (two) carried over structures of 1994-95 and 1 (one) new structure of 1995-96 was continued. Close supervision of construction/re-sectioning of 3 reaches of embankment and re-excavation of Khudirampur Khal was also done.

2.7 Summary of the flood damage assessment model

The concept of controlled flooding is one of the key concepts in the Flood Action Plan. This concept implies that moderate floods within the compartment are allowed to spread over the land, but in a controlled way. Therefore, appropriate provisions have to be incorporated in the embankments. Furthermore, is proposed to subdivide the flood plain into a number of individual compartments, in order to spread flood water (originating from the river system or from local rainfall) over the protected area and reduce the risk of deep flooding and associated damages. The application of this concept is tested in the Compartmentalization Pilot Project (CPP) Tangail.

This sort of controlled flooding and drainage will inevitably create winners and losers. The question is to identify these impacts and to balance the impacts for all stakeholders. It is not yet known whether the positive benefits will outweigh both the negative impacts (inside and outside the project area) and the financial costs (building, operating and maintenance).

It should, however, be understood that the assessment of damages directly related to improved water management by means of compartmentalization is only one tool, even though an important one, among others such as GIS (Geographic Information System), M + E (Monitoring + Evaluation) and CBA (Cost Benefit Analysis) contributing to the MIS (Management Information System) of the project, which in turn will enable the management to take the right decisions and conceive appropriate activities.

FDAM will be able to provide valuable information on damages prevented (or benefits) in the field of private and public property (houses, infrastructure), agricultural production and fisheries, by a fully operational compartmentalization concept. Figure 0.1 presents an overview of FDAM in the context of CPP.

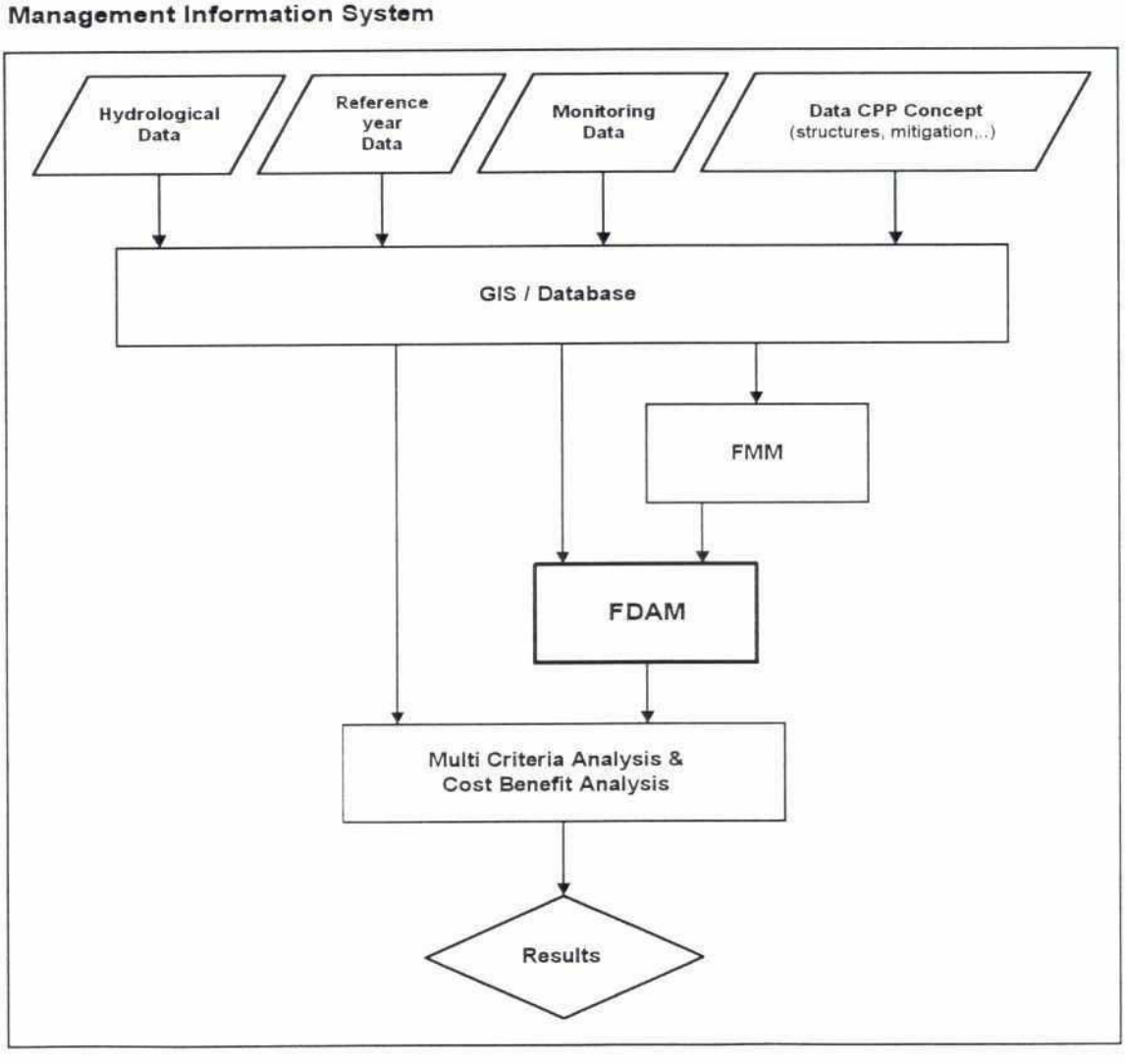


Figure 2.4: Context of Flood Damage Assessment Model in CPP Tangail

The Flood Damage Assessment Model (FDAM) estimates the benefits of the strategies to reduce the flood damage using GIS techniques. This model is an extension of the Flood Management Model (FMM) which has been recently developed in the FAP-25 project. Figure 0.2 presents an overview of FMM and FDAM and the relation between the two approaches.

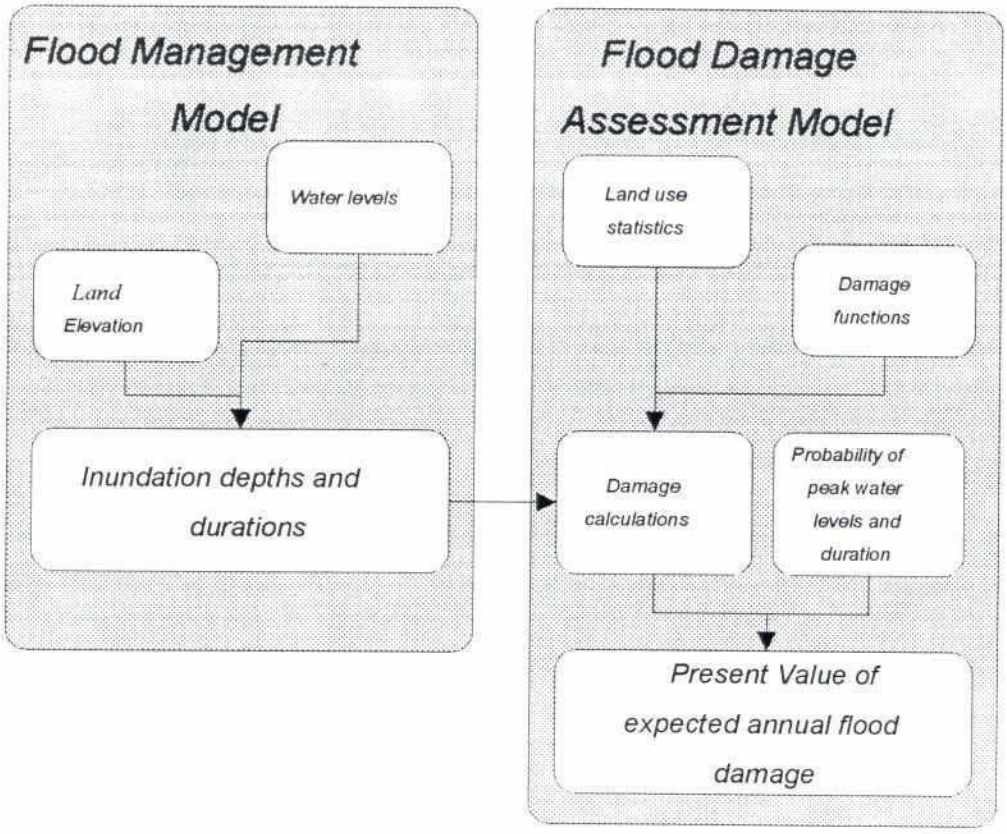


Figure 2.5: Relation between FMM and FDAM

The Flood Damage Assessment Model for CPP Tangail contains the following damage sectors:
1. Flood protection (houses and infrastructure)
2. Agriculture
3. Fisheries

The aim of the model is to estimate the flood damage in physical units (number of damaged houses, agricultural production, ...) and the expected annual flood damage (in Tk.). The model uses the following assumptions:

- The damage function of houses and infrastructure is based on historical data of Tangail district. However, damage data is often not reliable and it often overestimates the damages. The Ph.D. research by Mr. Islam at the Flood Hazard Research Centre should be used to update the damage functions which are used now in the system;
- The flood damage estimate of agriculture takes into account the flood damage due to high water levels, especially the duration of exceeding certain threshold values. Moreover, since farmers decide about the cropping pattern, CPP might also influence the behaviour of these farmers. In the Flood Damage Assessment Model this factor is taken into account.
- The impacts on fisheries are estimated using data from catch assessments in the project area. These assessments have been made in the period 1992-1995. The impact on fisheries take into account the habitat of fishes.
- The expected annual flood damage is calculated using the Damage assessment of the four damage sectors and the probability of peak water levels and the probability of the duration of exceeding threshold values. For practical reasons, the damage calculations use the hydrological years 1987-1991 (five years).

First results have been obtained using one part (cluster 1B, roughly 20% of the area) of the CPP area. Results for other clusters have also been obtained, including the adjacent areas. They are not yet presented in this report because they need some better understanding and checking.

It can be concluded from the first results that, without mitigation measures, the impacts for fisheries are negative (the aquaculture is not taken into account). Positive impacts are estimated for houses, infrastructure and agriculture. Changes in agricultural land use have also been taken into account for cluster IB. Table 0.1 presents an overview of first results for cluster IB of the expected annual flood damage reduction.

Table 2.5: Expected Annual Damage Reduction and Present Value in Cluster 1B. Here, for agriculture no improved land use is assumed

sector	expected annual damage reduction (lakh Tk.)	Present Value damage reduction (lakh Tk.)
Houses	7	86
Infrastructure	3	33
Agriculture	23	287
Fisheries	-7	-85
Total	26	322

It should be stressed however that the results in Table 0.1 are the outcomes of first calculations with FDAM for CPP Tangail. No quick conclusions should be made from these results. In these outcomes many uncertainties are present, among others related to the water management strategy in the Flood Management Model. Therefore, some of the benefits might be over-estimate (e.g. agriculture) and some of them might be underestimated (e.g. fisheries).

Future activities for FDAM may include (a) further use of the approach in CPP Tangail; and (b) development of the model as a tool in Water Resources Management in Bangladesh.

3 WID PROGRESS AND ACTION PLAN

3.1 Women Participation

In this quarter, no new activities were initiated and only the on-going WID/CPP activities are going on. A total 17 groups of EMG are working according to their contract. LCS work will be started from next quarter where women will have 50% work as per LCS guidelines.

Women members of SCWMCs have participated in the introductory meetings with SCWMC and new consultants team.

A qualitative survey on appraisal of CPP institution and gender impact in CPP activities is planned where women will have the scope to particpate in a countable figure.

3.2 Maintenance of embankment through EMGs

3.2.1 Status and Progress

The Embankment Maintenance Groups (EMGs) represent a strategy towards preventive maintenance of water management infrastructure. The activities involved are suitable to female labourers and therefore the implementation of preventive maintenance provides an opportunity to intervene in the highly segregated labour market, by protecting this newly generated employment opportunity for women belonging to the poorest of the rural poor.

An EMG consists of **a group of female labourers** (4 to 10) contracted by the BWDB on a master-roll basis to execute preventive maintenance works. EMGs differ from regular contractors to the extent that they get payment per time unit instead of per volume of work. According to the guideline, EMG members are contracted for six months. The EMG members are working 6 hours in a day, 6 days in a week. These women receive their salary every fortnight through their group and individual bank account. There is a provision for forced savings, which means a sum of taka to be deposited to the individual bank account which they can only draw after completion of the contract. The contract is renewed with the same people subject to satisfactory performance.

3.2.2 Present Status and Progress of EMGs in CPP

The first EMG started on 1st September '95 and at present 17 groups of EMGs are working on the peripheral embankment from Gala to Silimpur and Dhapnajar to Rasulpur embankment (see attached map). EMG members are 93 and the length of the embankment covered under EMGs is 46.5 km. Upto December '96, Tk. 7.35000/ have been disbursed for EMG purpose.

3.2.3 Payment and Financing system

The BWDB deposits to a Bank account named "Preventive maintenance", a total of six months wages including equipment money. Once such a deposit has been made, only then EMGs should start functioning. Each EMG opens a bank account in a scheduled bank under the name of the EMG. The account is jointly operated by the Group leader and by the Secretary. Uttara Bank Tangail branch is selected for the CPP EMG purpose.

The daily wage of an EMG member is calculated on the basis of the BWDB's schedules of rates for unskilled labour and in CPP EMG members are getting Tk. 45/ per working day. It is made compulsory for each EMG member to save minimum Tk 10 per working day. Every month the amount corresponding to one month saving is transferred to each of the EMG members' individual Bank accounts. The public holidays are day off without payment. At present (from 1st of

September '96) total 93 women are working and the average monthly cost is the 1,05,000 for 46.5 k.m. i.e. roughly the 30,000 per km yearly (including supply of equipment).

The detailed procedure of payment is explained in the approved EMG guideline. The proper implementation of the EMG has been made successful with the assistance of TA staff.

3.2.4 EMG Functional literacy and health education programme

To improve EMG members health knowledge and facilitate operation of bank account weekly session has been organised. To continue the functional literacy and health education programme, CPP has made a contract with Coalition Project Tangail (a Project of Bangladesh Womens Health Coalition) for implementation of this programme. The literacy course consists of 20 members in a group. The session is conducted six days in a week and two hours in a day.
Objectives of the course are:

- to learn how to write and read and to do simple calculation;
- to operate their bank account;
- to understand importance of taking care of family health;
- to prepare nutrious food with minimum cost;
- to share the ideas with other women including men, etc..

By the end of December/96, the basic course was over and 3 more months the follow-up course will be continued by the same organisation.

3.3 NGOs/GOs cooperation

During this quarter, WID specialist arranged informal discussion with the GOs/NGOs and some of the GOs/NGOs agreed to participate in the Gender Impact Survey which will be implemented in next quarter. The NGOs are: CWFP, Coalition Project, SSS, SATU and GOs are: DAE and Women Affairs Department.

3.4 General

Ms Marianne Nugteren, expatriate WID specialist was in the project for about two weeks in Oct-Nov/96. At that time both the Specialists (National and Expatriate) organised and attended some meetings with GOs/NGOs and some SCWMC meetings during her visit in Tangail. She also met some of the WID experts in Dhaka to have to familiarization about WID/GAD practice in Bangladesh.

A Gender Position Paper for CPP Phase II has been prepared by National WID Specialist and a Desk study report on WID/GAD has been prepared by expatriate WID specialist during this quarter.

Guidelines for the Gender Impact Study was prepared by the WID Specialists which was combined with appraisal of CPP institution later on.

Some Social Survey/Research Firms were consulted regarding survey on "Appriasal of Water Management and Gender Impact" and finally COMMUNICA was selected to do the Survey as mentioned above considering their experience in this field. The survey team composition, contract of the COMMUNICA, training for the team members were planned which will start beginning of the next quarter.

Winter vegetable production program (see chapter 5.5).

4 FISHERIES AND AQUACULTURE

4.1 Monitoring of the fish catch

The regular catch assessment and the frame survey were continued during this quarter in the Project area.The catch assessment in Gharinda and Ghotokbari beel was continued once in every fifteen days. The fish catch monitoring of Lohajong river and Gaijabari khal was continued once in every week and was stopped at the end of November as these rivers and canals dried up and as such the catch assesment was discontinued. Frame survey was continued once in every week in all of the sampling sites. Accordingly, the river and canal frame survey was stopped alongwith catch monitoring.

4.2 Monitoring of beel concept

In order to monitor the beel concept, the beel water level are regularly monitored. In this quarter the water level monitoring in Gharinda beel (cluster III) , Ghotokbari beel (cluster Ib) and Agbethor (cluster II) have been continued .

4.3 Monitoring of pond aquaculture in SC#(9-11)

The monitoring in 41 ponds in cluster 1b continued during this quarter. The monitoring of input , ready food, fertilizer, manure, stocking and management are regularly recorded by the extension officers. The harvesting will also be recorded duely. The prime aim is to find the productivity of the ponds and cost analysis. This is the area where CPP completed the aquaculture extension programme. All together 41 ponds have been taken as sample ponds .

4.4 AEP in cluster IV & V

The aquaculture extension programme is going on in clusters IV & V. The 2nd session training has been completed during this quarter. All together 391 pond owners are being provided with 2nd session of aquaculture training of which 66 are women. In order to disseminate the culture practice in a systematic manner , 80 ponds in the area have been selected as intensive pond. These ponds are better cared for by the project. Regular follow-up visits are paid to these ponds with a view to sustaining the training and use of the technology learned. All the ponds in the area are also regularly visited. The programme is going on and recording of the inputs, ready food, fertilizer, manure, etc are done regularly.

5 AGRICULTURAL MONITORING PROGRAMME

5.1 Agricultural Monitoring Program (250 plots) in the project area

The main objective of this program is to establish economic impact assessment by finding out prevailing cropping pattern, cropped area and intensity of land use in the project. Landuse data in this quarter for Kharif-I and Kharif-II seasons were collected and entered into the database and program for Rabi season was started. Out of 250 monitoring plots 112(45%) plots were cultivated in Kharif-I season and 170(68%) plots were cultivated in Kharif-II season and the rest 138(55%) and 80(32%) plots remained fallow in those seasons respectively. No plots were fully damaged due to flood or heavy rainfall but 5(2%) plots were found partially damaged due to heavy rainfall accumulation and poor drainage.

5.1.1 Agricultural Monitoring Program (40 plots) in the adjacent area (north)

Planning of this program was completed and will start from Kharif-I season 1997. In E_2 19 plots, E_3 13 plots and E_4 9 plots will be selected (similar to 250 plots selection criteria for the project area) considering a stratified two stage sample technique.

5.2 Establishment of reliable inputs/yields from monitoring 50 plots in the project area

Out of 250 monitoring plots, a total of 50 plots have been selected where information yield, intensity of inputs use, farmgate cost and prices of output will be measured. Data for Kharif-I and Kharif-II seasons were collected through a questionnaire and analysis of those were also completed.

5.2.1 Establishment of reliable inputs/yields from 10 monitoring plots in the adjacent area (north)

Similar to the selection of 50 plots within the project area for detailed information, a total of 10 monitoring plots in the adjacent area are selected.Planning is completed and the work will be started from Kharif-I season 1997. In E_2 5 plots, E_3 3 plots and E_4 2 plots will be selected like considering the selection technique of 50 plots.

5.3 Land Use Survey (twice-annually)

This program is showing the changes in cropping pattern that linked with water regimes in the subcompartment. Previously, it was conducted in October-November for Kharif-II season but a question has been arisen about its accuracy from M&E. Two seasons survey, one in April-May and other in October-November will now be conducted. In 1996, the program was planned only for clusters IB, II & III survey; at the moment cluster IV and adjacent area (north) have also been completed. GIS section already published the results for cluster IB, II & III.

5.4 Crop Demonstration Program

During Kharif-II season a crop demonstration program (T. aman HYV) was taken up to identify suitable variety of paddy and cropping pattern to be introduced and to motivate water users group in adopting the identified technologies in their farming practices. This program is implemented in collaboration with DAE, Tangail. This year (1996) 30 demonstration plots (it is an ongoing program) with 4 varieties (BR-11, BR-22, BR-25, BR-30) of paddy was established in sub-compartment Nos. 3, 4, 5, 6, 7, 8, 10, 11 & 12 within clusters IB, II, III and IV and 26 chawks. A total of 11 BS of DAE Tangail was also engaged for implementation of this program. Due to heavy rainfall and drainage congestion, 4 plots were badly and 2 plots partially damaged.

Harvesting started from 11.11.96 and crop cuts for 26 plots were arranged in presence of BS, TAO/SMO, representative from CPP and local elites. A total of 5mx2m area in three places (as per DAE system) in each plot was selected for crop cut and threshed and weighed in presence of all, thus the green weights of paddy and straw were obtained. Among the 26 plots, 4 field rallies for 4 best plots were arranged. Among the 4 field rallies, 1 (one) rally was held at AgBikramhati High School field. Director (Training) DAE was the chief guest of the rally and Chairman of that area presided over the rally. Project Director, Consultants, CPP, few journalists from Tangail, 250 male and 150 female farmers and local elites were present. On the basis of evaluation, 4 best plot operators and 4 best BS were awarded for their performance. Detailed information on yields will be available shortly.

5.5 Winter Vegetable Production Program

18 demonstration plots of about 2.00 to 2.5 decimal area around the homestead were established in subcompartments 3,4,5,6,7 in clusters II & III. Similar to the crop demonstration plots, this program is implemented in collaboration with DAE, Tangail; 6 BS are involved. The operators of this program are women. Five kinds of vegetables (Tomato, Cabbage, Cauliflower, Carrot and Falon) were produced in one plot. Falon is a new variety of pulse in CPP. Two days training was provided to the operators and BS involved. First day training covered Improved Vegetable Cultivation Technology and second day training covered its marketing impact in the family economy and nutritional importance.

5.6 Farmer's Training

This program was established only for pre-monsoon season (April-May) chawkwise about the water management system, adoption of new varieties in Kharif-II season and establishment of new cropping pattern in different flooding depth. It is an ongoing program and planned for 1997.

5.7 Agricultural Test Plots

In order to test the possibility of paddy varietal changes and shifting of cropping pattern with water management, this program was established. No test plots were conducted in 1996 Kharif-II season due to completion of first phase, though it was established in 1994 and 1995.

5.8 Irrigation Survey

It is a bi-annual survey done during April-May. Two surveys have been completed in 1993 and 1995 and program for 1997 has been planned. This program is only providing the varietal information like nos and types of equipment used in dry season irrigation with area, equipment not used due to mechanical or others troubles and other constraints that limit irrigation.

5.9 Dependency of Agricultural Services (twice-annually)

It is a new program developed for monitoring purposes. A questionnaire has been prepared for getting information from project farmers through RRA regarding agricultural support services like efficient inputs supply system, competent extension services, sufficient agricultural credit and improved marketing network.

6 INSTITUTIONAL ACTIVITIES

6.1 General

A total of 142 chawks have been delineated in the project area. Based on the hydrological similarity 109 chawk committees (CC) were planned to be formed and so far 99 CCs have been established and left over 10 CCs have not yet been possible to form due to various reasons.

At sub-compartment level, 15 SCWMCs have already been formed and only the balance SCWMC -16 (Tangail Town) is yet to be formed. Formation and composition of SCWMC-16 will need further discussion.

The PC/CWMC was established on July 2, 1996. The PC is composed of 79 representative members of the SCWMC, the line departments and the CPP and is chaired by the Deputy Commissioner of Tangail District.

6.2 Status of Formation and Reformation of Institutions at Stages

6.2.1 Chawk Committee (CC)

No attempt has been made in this quarter to form/reform any CC rather than finetuning in terms of filling up few posts of office bearers; and the status of formation of CCs remained unchanged.

6.2.2 Sub-Compartmental Water Management Committee (SCWMC)

Of the formed 15 SCWMC, 13 committees have been visited by the new consultants team through organizing discussion meetings as well as familiarizing themselves with the committees. A draft report on these meetings has been produced by the IDS (long term) in the month of November.

Few special meetings have been organized in chawk 31D, 31E of SC-15 for resolving long pending issue on construction of a regulator in Birpushia.

Process has been underway to exercise a combined PRA/RRA study for getting more insight in the functioning of the existing water management committees as well as for elaborating gender strategy. For this purpose, SC-3 and SC-10 have been selected and actual study has been scheduled to be completed during the second week of February, 1997.

It should be noted that a letter has been issued on December 31, 1996 by the Project Director/Superintending Engineer, CPP, BWDB, Tangail (letter no. PD/W-5/1659(30)/5) approving the present CCs and SCWMCs to continue their activities until May 31, 1997.

6.2.3 Project Council (PC)/CWMC

After installation meeting during July 96, there has been another PC meeting (2nd meeting) held on November 19, 1996. In this meeting two key decisions have been made on:

i) Establishing an Executive Committee within the PC;
ii) Co-opting the Executive Engineer, CPP, BWDB, Tangail as a member of the PC.

The minutes of the meeting has been produced, approval is still awaited.

6.2.4 Training

A four-day orientation training programme for some CPP staff and NGO representatives has been scheduled from 18 January, 1997 on appraisal of water management organization in CPP and gender impact of project activities.

6.2.5 Survey status of committee members by tiers

At this stage work has been completed to survey the status of the committee members in SC-3 and SC 10. It will be merged with field survey on gender impact assessment and appraisal for CPP during February, 1997.

6.2.6 Guideline for execution of minor works/finetuning by SCWMC

As per terms of reference of project, it has been started that "the project will prepare policies and guidelines for including the scheme beneficiaries and disadvantaged groups in the planning, implementation of physical works and their management".

By this time project has established institutions comprising scheme beneficiaries and distanged groups i.e. SCWMC's and as per terms of reference project has also prepared one guideline for execution of minor works/finetuning through SCWMC's, which has been duely approved by BWDB in December 1996. The approved guideline has already been distributed to the SCWMC's for taking action accordingly. The project expects to execute some minor works/finetuning of project work through SCWMC's during the year 1996-97. An amount of Tk.50.00 lakh has been earmarked in the ATAP for this head during this financial year.

6.2.7 Institutional water management component

As per policy guidelines of the project, almost all structures are being operated by the directives of the SCWMCs. Immediately before the starting of monsoon all the inlets and all other structures within the chawks remain open. The outlets are regulated according to the needs of the chawks. During monsoon and post-monsoon operation, all the regulators is managed according to the requirements of chawks. Opening of all the regulators before starting of monsoon is decided by the SCWMCs only, but their operation during monsoon and post-monsoon is done through directives of the SCWMCs having discussion with the chawk committees. There are 47 water control structures in different places of the project area.

Physical operation of all the regulators is done by operators appointed by concerned SCWMCs. A total of 33 gate operators have been recruited for all the structures. In some areas one operator is responsible for more than one structure.

All the gate operators have been imparted intensive training on "Operation and Maintenance". All of them are provided with keys of the structures and with clear job description. Adjustment and re-adjustments of the keys take place through SCWMCs in consultation.

During this quarter operation of all the regulators remained non-functional due to non-availability of water.

SCWMC - 15 has taken initiative to resolve a long pending conflicts on construction of structure together with re-excavation of canal in Birpushia.

SCWMC-10 has undertaken the effort to reach a decision so as not to excavate a canal from Singarkona chawk to Binnafair khal.

7 ENVIRONMENT AND BIO-RESOURCES ACTIVITIES

Two environmental impact monitoring activities namely, Ground Water Availability Monitoring and Water Pollution Monitoring were carried out. Results of these monitoring activities and planning for the Environmental Management Plan (EMP) for the CPP final phase (1997-2000), are briefly described in the following sections. In addition, some enquiries were made for finding suitable organizations for conducting the Soil Fertility Changes Monitoring and Bio-Diversity Monitoring programmes.

7.1 Ground Water Availability Monitoring

Availability of ground water is monitored through recording and analysis of ground water table at 4 BWDB and 13 DPHE well sites. During October-December 1996, water table data have been collected in respect of the BWDB observation wells and the same are presented in Table 7.1 and shown in the hydrograph along with some previous data for comparison. Location for monitoring sites are also shown in the Map. Water table data for DPHE tubewells will be available during the dry season (April/May).

Table 7.1: Ground Water Data for BWDB Wells for October-December, 1996

BWDB Well Number	Depth of Ground Water Table in metre				
	October 1996	November 1996	December 1996	October, 1995-December,1995	October,1994-December 1994
TA 03	NDA	NDA	4.90	NDA	3.7-4.5
TA 09	2.89	3.00	3.55	2.4-3.3	2.5-3.8
TA 35	2.28	2.48	3.04	2.3-2.6	2.5-3.4
TA 39	3.54	4.43	5.18	3.2-5.0	4.1-5.2

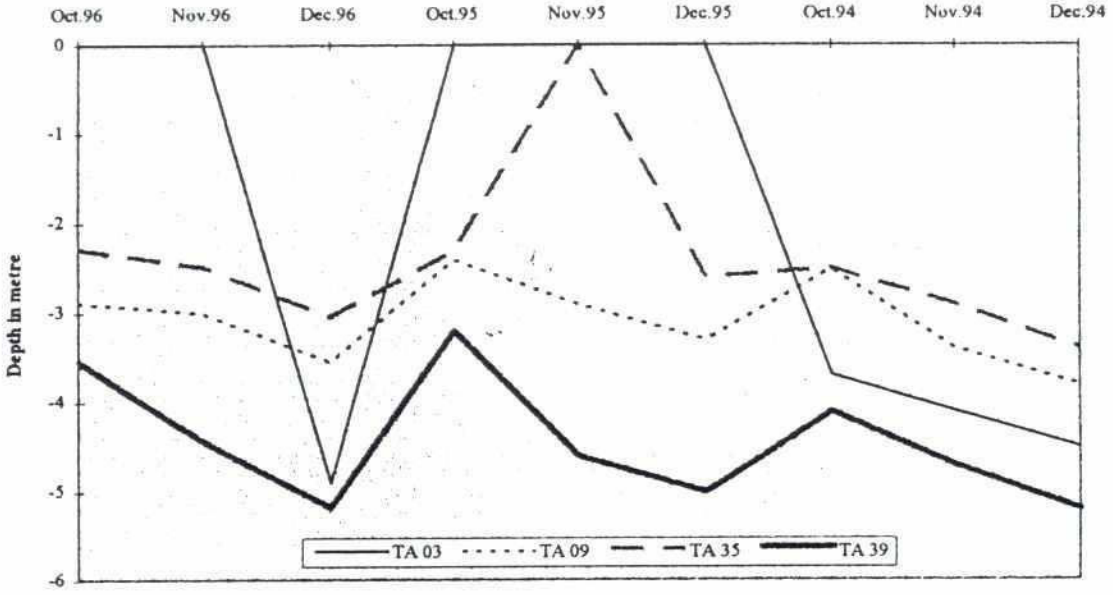
Note : NDA No Data Available

Ground water data for BWDB observation wells for the period from October-December, as presented in the above Table, show gradual increase in water table depth as time proceeds with the highest depth of 5.18 metre for well TA 39 during the month of December, 1996. Comparison of December 1996 data with those for October-December,1995 show a rising trend in ground water table for all the well sites. Again comparing the same data with 1994 data set a reverse trend is observed, except in case of TA 03.This means, water table at all monitoring well sites went to their recorded down level in 1994 following a rise in 1995 and then again fall in 1996.The highest ground water depth of 5.18 metre as recorded during the present quarter (October-December,1996) for the well TA 39 is still lower than the corresponding figure for 1994. These observations therefore indicate only temporary fluctuations but no permanent trend for lowering the ground water table for the respective well sites.

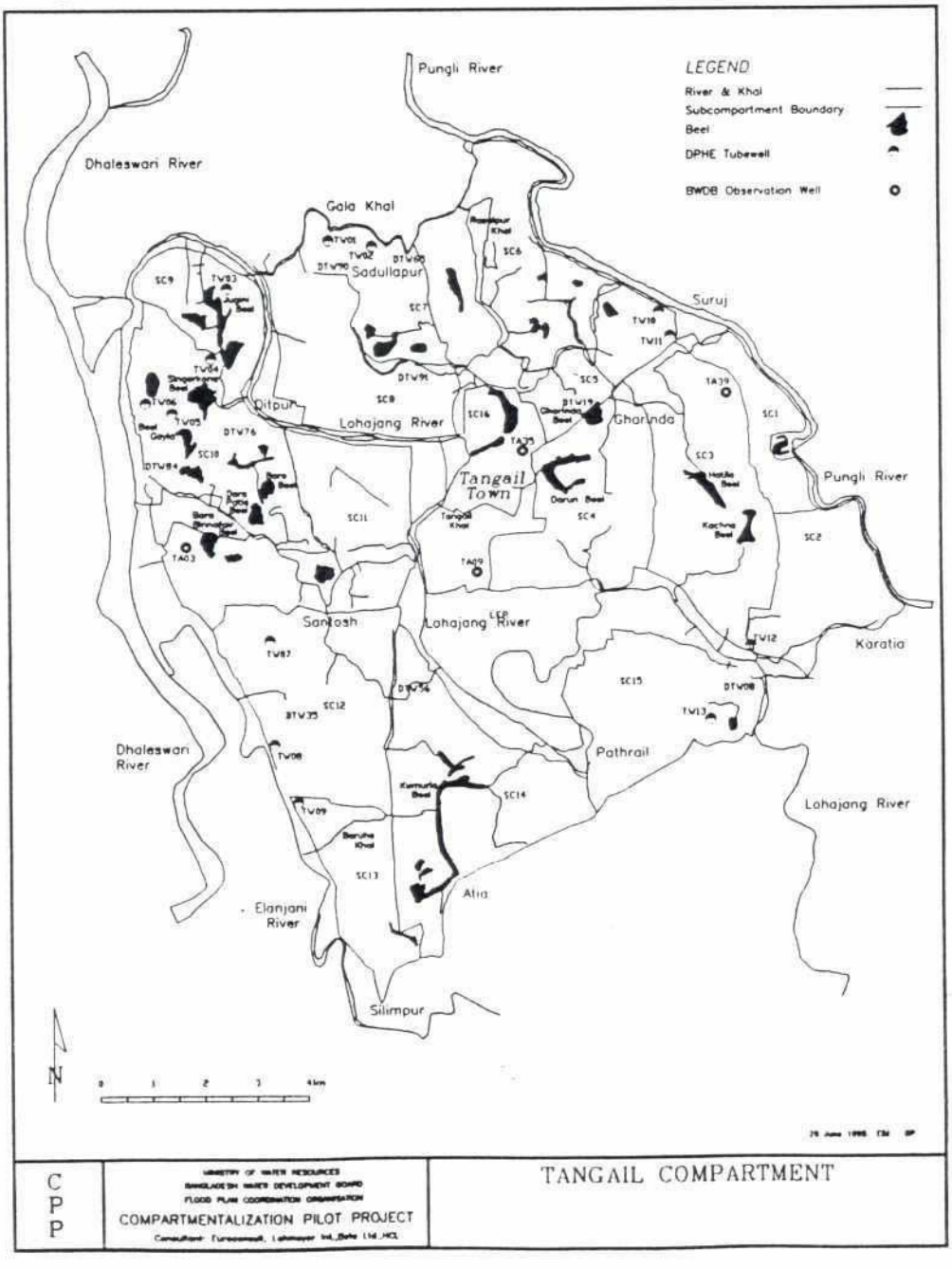
7.2 Water Pollution Monitoring

Water samples have been collected from all the 15 monitoring sites during October-December 1996 and analysed. Results of water analysis indicated that p^H value for all the sites were within the Environmental Quality Standards for Bangladesh (EQS) while Chemical Oxygen Demand (COD) values all above the standard except in cases of Lohaganj River (up) in November and the two hand tubewells (site codes 7 and 14) in December. Comparison of present quarter's (Oct-Dec, 1996) COD value with the corresponding results for 1995 gave mixed impression about increase and decrease for recreational waters while a marked decrease for drinking waters in December 1996. COD at hand tubewell locations 7 and 14 was measured at 2.0 mg/L and 3.6 mg/L during the present quarter in place of 10 mg/L and 28 mg/L, respectively, for the 3rd quarter of 1995.

Map 7.1: Groundwater Hydrographs for BWDB Observations Wells



Map Ground Water Availability Monitoring Sites



This is a positive indication in respect of improved ground water quality from hand tubewell sources. Water analysis data for ammonia revealed that Tangail Khal and Hand Tubewell sites contained ammonia concentrations above the Bangladesh standard. Comparison of these data with those for previous year clearly predicts increased ammonia pollution in the Tangail Khal during Oct-Dec, 1996. In 1995, ammonia concentration in this khal water ranged from 4.3 mg/L to 10.8 mg/L while in 1996 it has been measured in between 10 mg/L and 30 mg/L. This observation may carry some significance in respect of project impact on increased surface water pollution in this khal water. However, this can not be exemplified with ground water as because the ammonia concentration in both hand tubewell waters remained more or less same during the 3rd quarter of 1995 and 1996. Highest dissolved oxygen (DO) for fishing water was measured at 13.9 mg/L and 13.1 mg/L in case of Jugini Beel and Santosh Dighi, respectively, in December, 1996. These figures are well above the EQS of 4.0 mg/L-6.0 mg/L Higher DO in fishing water is a good symptom and this happened possibly due to falling temperature during the month of December. Iron content in hand tubewell drinking waters exceeded the Bangladesh standard (0.3 mg/L-1.0 mg/L) and this trend has been noticed in all quarters during the past. However, the present data set do not showed any marked deviation from the last quarter's data. Comparison of results for microbiological analysis with the same for 1995 show mixed trend for recreational waters i.e., in some cases it increased while for others it decreased. But for drinking water no change is recorded and all these satisfied the Environmental Quality Standards for Bangladesh.

7.3 Environmental Management Plan (EMP) for the Final Phase

Keeping in view the recommendations made in the CPP's Mid-Term Evaluation Report, Re-Formulation Report, and First Phase Completion Report, a draft Environmental Management Plan (EMP) for the final phase (1997-2000) is under preparation. This EMP will contain Monitoring of Soil Fertility Changes, Ground Water Availability Monitoring, Water Pollution Monitoring, Social Forestry Programme and Integrated Pest Management Training. In addition, a few other activities like, Bio-Diversity Monitoring, Monitoring of Agro-Chemicals Use, Disease Incidence Monitoring, and Environmental Education and Training Programme will be introduced in the new plan. Moreover, some of the 1st phase activities will be strengthened by increasing the number of monitoring sites, frequency of monitoring, number of trainee groups, etc. For example, the Soil Fertility Changes Monitoring started with sampling and analysis of top layer soil from 27 selected agricultural plots. This programme will be revised by reducing the number of agricultural plots to 20 while incorporating new 15 sites from both inside the project and adjacent areas for monitoring of river-borne sedimentation including water and soil analysis.

8 SOCIO-ECONOMICS

8.1 General

During the 1st quarter (October - December, 1996) of the CPP Final Phase, the Progress of this issue was mainly in the line of identification of base data with year, acquaintance with the secondary data sources, Government offices related to basic statistics on household, livestock, agriculture, statistics at district and thana level for data collection, compilation etc. works. Moreover, the identification of economic parameters, analysis method and fields etc. were chalked out.Data on flood damage (now prevented) are also under collection from the respective Thana offices and GIS, CPP.

In the Table 8.1 (attached) tentative information has been presented for the determination of base data, year and also for any suggestion from respective sections of the project. after some modification and improvement, the base data will be preserved/recorded shortly for use.

Data in CPP household survey 1992 and data from thana offices on livestock/draught power and flood damage are not directly useable. Hence, efforts are going on to calculate those from BSs' collection, or expected data through RRA/PRA.

The required assumptions regarding the project analysis/evaluation are determined and the fields of direct and indirect benefits and investment costs, O&M costs and others costs have been framed. The process of calculating economic costs/prices has also been determined.

8.2 Identification of major fields of costs and benefits

Direct costs

Investment:	Structure, land, embankment, khal, O&M during construction, transport, overheads etc.
O&M:	O&M for the above features on routine, periodic and emergency basis.
Mitigation cost:	Related to the investment or supplementary items in the project

Benefits:

1. Agricultural net incremental production value
2. Fisheries net incremental production, value
3. Supplementary benefits (qualitative) employment, transport, market, flood damage prevention, land price, distribution of income, women employment.

Some data as collected from District marketing office, Tangail on prices of Agricultural commodities (input output) of May '96, Nov/96 and sample data from Modhupur and Karatia markets in May/96 for compilation by DMO and some spot data from farmers in Dec/96 during site visits at Brahman-Kushia and Porabari, are calculated and presented in Table II attached.

Data on requirement of input and product from the sample plot survey by CPP, 1996 are now under process of calculation for accruing the crop wise farm profit and also project benefits by the Agriculture section of CPP. The family as well as women persondays and persondays adhered to bullock pair(during tilling) have not been segregated in the mentioned survey. Hence, these will be separated for finding out the actual variable cost of cultivation and income of family, labor, women, draught power etc. A sample format for estimation of farm profit (crop wise) has been determined. After getting processed data(as mentioned) from Agriculture Section, appropriate analysis will be done for every crop and for whole project on the basis of the survey 1996 and subsequent calculation by the respective section.

Table 8.1: **Determination of base line data and year**

SL	Name of Issues	Base Year and data determined	In the line of ongoing process	To be settled	Remarks
1	Fishery(Capture and culture)	Capture 1993-94 Culture 1995-96			Data of 1995-96 can be used for 1993-94
2	Agriculture	CPP agriculture Survey 1992 (Annex II) + Interim Report '92	Segregation of family labor, draught pair, women, crop pattern of 3 seasons with cost-benefit estimations		
3	Environment				
a	Water quality/ Pollution	1992 (EIA Case Study)	More results of 1995 are incorporated		
b	Soil Fertility from water sediment/nutrient		Results of 1996 and Jan.'97 are under process		
c	Soil Fertility (Agricultural monitoring plot)	Results of 1996			
d	Water Sediments	Results of 1995		Tests under action 1997	To be done 1997
e	Biodiversity	EIA case study 1992	Updated in 1996		
f	Agro-chemical use Monitoring	Data of 1995(B.S)DAE		Compilation with Farmer and Dealer	To be done in 1997
g	Disease and Treatment			Preparation done for work in '97	To be collected in 1997
4	Homestead, embankment, road plantation	Started 1995			To be extended 1997
5	Flood damage (prevention)			Under collection	To be estimated in 1997

6	Economic				
i	Prices/costs	Estimated in 1992 (FPCO)		Under revision by FAP 6 (WARPO) '97	To be collected from WARPO
ii	Livestock / Draught power	CPP agriculture Survey 1992(Annex II)	CPP HH Survey '92 , BBS report '95		To be compiled with other secondary sources and Agri. census '97
iii	Employment	CPP Agri. Survey 1992 and onward surveys	-DO-		-DO- and BBS '95
iv	Income distribution	From Agri.(base) Survey 1992 (Annex II)	-DO-		-DO-
v	Transport and market	FAP 20 boat Survey 1994, Market & Transport Survey, Kranti 1994		RRA/PRA 1997	To be done 1997
7	Institution (O&M Committee)	Started in 1993 99 CC, 15 SCWMC & PC formed up to Dec. '96	Reformation ongoing	Training on Management,SE & Technical	
8	WID, Institution, Employment,income generation,	CPP Household Survey 1992		Compilation with BBS '96	With other sources

Table 8.2: Collected market prices of selected agricultural commodities

Crop	Tk/kg May/96	Madhupur+Karatia May/96 (compiled)	Tk/Kg Nov/96	December/96 From farmers	Av. 96 Tk/Kg
T. Aman HYV	8.17		5.75		6.96
T.Aman(LIV)Pazam	8.97		6.85		7.91
B.Aman (L)				4.75	4.93
Jute	12.38		10.14	8.12	11.26
T.Aman (L)				5.1	5.10
Boro(HYV)	5.36			5.5	5.43
Boro(LIV)pazam	6.83			6.0	6.42
Wheat (white)	10.47				10.47
Wheat (Red)	8.73				8.73
Masur	24.65				24.65
Khesari	12.19				12.19
Mustard	17.75		20.25	18.12	18.56
G.Nut	11.00		19.50		15.25
Onion	12.50		21.00		16.75
Garlic	20.50		22.00		21.25
Dry Chilies	45.00		65.00		55.00
Potato	7.64				7.64
Vegetable	11.25		11.15		11.20
Inputs					
Urea	4.70	5.00	5.00	4.7	4.80
TSP	9.20	10.25	NA	7.6	8.70
SSP	5.80	6.25	6.25	-	6.10
MP	8.00	9.00	8.00	7.41	7.88
Zinc	28.00	32.50	35.00		31.83
Zipsum	3.00	4.00	4.00		3.67

Source: District Marketing Office Tangail
A few spot collections from farmers in Dec. '96 by the economist

9 MONITORING AND EVALUATION

9.1 General

M&E was actually initiated from January 1995 but the activities could not make much headway due to non-finalization of indicators. Project monitoring, however, continued by different technical sections through monthly, quarterly, annual and other reports. Benefit monitoring and evaluation programs were framed, some key and secondary indicators were identified and a few focused studies and impact surveys were initiated and a few of such studies were completed during the 1st phase ending on 30th September 1996. From October 1996, the new national consultant joined M&E section and a short term specialist from expatriate side also arrived. Both specialists prepared work plan on M&E during the quarter.

9.2 Identification of Indicators

The progress monitoring and impact indicators identified by the earlier team (phase-1) were thoroughly reviewed and it was observed that these indicators would not fully encompass M&E purpose. M&E section primarily concentrated to develop a comprehensive list of indicators. Initially 30 indicators were developed along with their technical sheets explaining the rationale and usefulness of the data for M&E, collection assumptions, risks and conditions, frequency of collection, processing and analysis and section responsible for such data collection and a work plan on Monitoring and Evaluation was prepared in November 1996 under the supervision of Mr. Harm-Jan Raad, the expatriate M&E specialist.

The indicators so prepared were furnished to the technical sections for discussion and necessary modifications. The informal dialogue took place with the technical sections and formally on 30.10.96.

Necessary questionnaires based on the indicators were drafted for placement in the meeting held on 17.12.96 with all CPP consultants. The questionnaires so prepared were again reviewed on 29.12.96 mainly on account of a paper prepared on Monitoring and Evaluation by Mr. Richard Wiens, Expatriate Economist. This necessitated inclusion of a few indicators vis-a-vis questionnaires in the list. Now the total indicators and activities stand at 36.

9.3 Monitoring & Evaluation System

M&E section has been trying, in close co-operation with the other sections to present a viable, transparent and sustainable M&E system.

A logical framework prepared by M&E section gives list of activities to be executed by CPP in the second phase of the project, with their direct effects and expected impacts. All these project activities relate to the work of technical sections which will provide a base to identify for each section a number of project activities, together with outcomes to be realized, direct effects, and impacts to be expected. At this stage of M&E process, there will be no critical evaluation of the project activities, as it can be rightfully assumed that Reformulation Mission performed this task. At a subsequent period, it may be necessary to bring changes to project activities, if and when monitoring proves certain activities do not perform as per schedule.

Improved water management may result in more favorable conditions for agricultural production by delaying early floods in the Kharif-I season and by lowering of water levels in Kharif II combined with faster drainage of water of late floods in the beginning of the Rabi season. This will, of course, not increase the cultivable area but it will, however, allow a further intensification of agricultural production by permitting a switch from broadcast Aman to T. Aman. This may be

accompanied by a more intensified use of the Rabi season through its prolongation to April. Actual developments in total cropped area as well as per crop in addition to yield levels will be monitored by Agriculture Section over the remaining project period. They will be required to determine the incremental benefit.

9.4 Lesson Learnt

CPP is a Pilot Project and both structural and non-structural measures are yet to be accomplished in full. At this stage, it will be inappropriate to make any judgment on its performance & its ability to achieve the objectives. But it would be noted that CPP faced tremendous opposition from local, national and international circles. This is now almost over and the target groups of the project are eager to cooperate with the project activities and if this trend continues till the full maturity and completion of the project, this could be worthy of replication in similar hydrological area.

9.5 M&E Programme 1997

M&E section presents the programme for M&E for 1997 in the barchart attached. This barchart is only indicative in nature.

9.6 Proposed M&E Actions

A number of technical section with respect to personnel is not fit to implement M&E system. A respectable number of sections need to recruit extra personnel and properly train them for the tasks related to their own work as well as monitoring. Individual section need may be verified for providing support personnel and logistics.

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Table 9.1: Planning data collection for M&E

PLANNING DATA COLLECTION FOR M&E

No. Data collection Subjects/Indicators	Year 1997 J	F	M	A	M	J	J	A	S	O	N	D
Project Management :												
G1 Endorsement of the CPP concept			NO ACTION IN 1997									
G2 Eval. of total compartment needed			NO ACTION IN 1997									
General information CPP expenditure	■	■	■	■	■	■					■	■
Engineering Section :												
Investment and O&M cost	■	■	■	■	■	■						
Assessment of flood retention area					■	■	■	■	■			
Gauge readings recording					■	■	■	■	■			
Sedimentation measurement of water ways				■	■					■	■	
Water management documents			NO SPECIFIC TIME PATH									
Institutional Section :												
Composition/objective committees							■	■	■	■	■	■
Functioning committees	■	■	■	■	■	■	■	■	■	■	■	■
Recording complaints	■	■	■	■	■	■	■	■	■	■	■	■
Agricultural Section :												
Landuse pattern	■			■	■	■	■			■	■	■
Cropping pattern surveys	■	■	■	■	■	■	■	■	■	■	■	■
Monitoring plots and farming system	■	■	■	■	■	■	■	■	■	■	■	■
Dependency of agricultural services	■			■	■	■					■	■
WID Section :												
Women's position in committees	■	■	■	■	■	■	■	■	■	■	■	■
Awareness raising programme	■	■	■	■	■	■	■	■	■	■	■	■
EMG and LCS contracts	■	■								■	■	■
Survey perception women									■	■		
Expenditure pattern EMG/LCS part									■	■		
Fishery Section :												
Catch assessment surveys/frame surve.	■	■	■	■	■	■	■	■	■	■	■	■
Recording Beel water levels	■	■	■	■	■	■	■	■	■	■	■	■
Survey hatchling migration						■	■					
Aqua-culture training/ monitoring/followup	■	■	■	■	■	■	■	■	■	■	■	■
Nursury operation	■	■	■	■	■	■	■	■	■	■	■	■
Environmental Section :												
Soil fertility monitoring	■	■	■	■	■	■	■	■	■	■	■	■
Bio-diversity monitoring & social forestry	■	■	■				■	■	■			■
Agro-chemical monitoring & IPM training				■	■	■				■	■	■
Groundwater availability monitoring	■	■	■	■	■	■	■	■	■	■	■	■
Water pollution and disease incidences monitoring	■	■	■	■	■	■	■	■	■	■	■	■
Environmental education and training	■	■	■	■	■	■	■	■	■	■	■	■
Economics Section :												
Collection of base statistics	■	■	■									
Flood damage assessments	■									■	■	■
Statistics adjacent areas	■	■	■	■	■	■	■	■	■	■	■	■
Transport and market study			■	■	■	■	■	■	■	■	■	■
M & E Section :												
Review M&E indicators					■				■	■		
Appraise validity assumption etc.					■	■	■	■	■			
Statistics pre-project situation				■	■	■	■	■	■	■	■	■
Manpower Schedule :												
M & E Expert (Local)	■	■	■	■	■	■	■	■	■	■	■	■
M & E Expert (Expatriate)				■			■	■	■	■		
Data Processing Analyst		■	■	■	■	■	■	■	■	■	■	■

10 PUBLIC RELATION ACTIVITIES AND INFORMATION DISSEMINATION

10.1 General

A precondition for asking people to participate in project activities, is their access to adequate information on the related subjects. CPP, since its inception, has consulted the PAPs in different ways. Being a new project in concept and process approaches, it is an imperative to let everyone have his or her say. It is observed that criticisms result from information gap. To address this need for correct information, the project, in 1995, has restructured the total information dissemination mechanism.

An Information Dissemination Center has been opened in December 1994. The information has been made accessible to all. Regular discussion sessions with journalists have been arranged. These efforts have created an atmosphere of positive understandings of successes, failures and limitations. These pioneering efforts of the project have resulted in a recommendation "to create a public documentation and information centre for water sector planning at WARPO and on information dissemination centre at BWDB project sites" in the Joint Statement of Government of Bangladesh and its Development Partners on the Bangladesh Water and Flood Management Strategy signed on December 04, 1995.

10.2 Progress and functions of IDC

The project information center is located in the heart of Tangail town close to the public library and Municipality. The center is staffed with an Information Officer and one associate.

During this Quarter, the IDC has been visited by 971 visitors who are professionals, scholars, journalists, policy makers, students, businessmen, NGO executives, GoB officials, housewives, farmers, teachers and others. Professionals were the largest group visiting the IDC. During this quarter, display boards, placed in the IDC, were reorganised with new pictures and information. A new board with training aspect is also placed.

Mobile van : In order to bring information of the project at the doorstep of the rural people, a show using a mobile van is arranged frequently. About 4-7 days before the shows the chawk committees, union parishad members and local elites are invited by letter to organise the community people. Usually the show starts in the evening and included description of project activities on display boards, project videos and open discussion. Most of the participants are farmer. A total of 24 shows have already been arranged (Figure 10.1).

During this quarter, about 300 people attended five mobile van shows arranged at Pichuria, Char Kagmara, Enayetpur, Dharerbari (west).

In-house programmes : A total of 9 different groups including 4 groups of SCWMC trainees, housewives, students and teachers were invited in the IDC where project activities were discussed during the reporting period.

Video shows : A total of 125 video shows (documentary film on the project and other related films) took place in the quarter for the interested audience both at the field and in the IDC.

* FDAM seminar held at EGIS on 14.11.96 - display from IDC
* Project council meeting - display from IDC
* GTZ mission who arrived for TIDP project of LGED was appraised of CPP activities on 16.11.96.
* Prompt workshop on guidelines of people's participation held on 21-23 December 1996.

Compartmentalization Pilot Project

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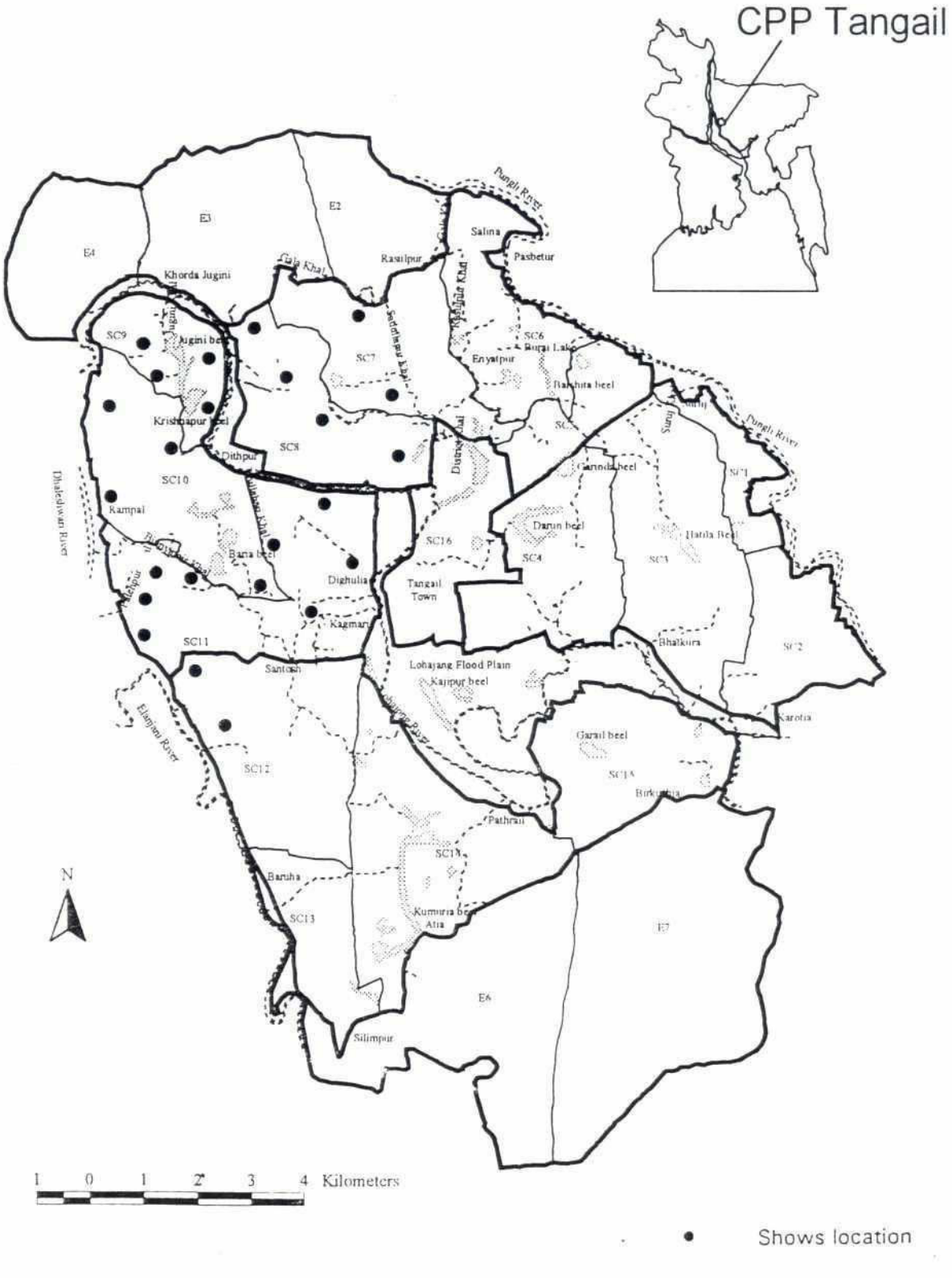
Figure 10.1: Location of mobile information campaign (From April 1995 to December 1996) within project area



10.3 Linkage with local press

The project is giving attention to this effort of 'Meet the Press'. Regular briefing sessions with individual or group of journalists are taking place. Journalists are also taking active interest in project activities and are attending field level functions.

A 'Meet the Press' meeting was held at the IDC on December 4, 1996 with Tangail journalists. A total of 29 journalists from various weeklies and dailies published from Tangail attended the meeting.

10.4 Press coverage

The project has been focused many ways by local and national dailies, weeklies covering wide spread of subjects.

During the quarter (October-December 1996), another 11 news and feature items have appeared in national and local dailies. All of these appeared in Bangla. Of this, 3 appeared in national newspaper.

10.5 Visitors

- September 21, 1996: Mr. A.M.M. Khairul Bashar, Deputy Team Leader, SRP.
- September 21, 1996: Mr. Abdus Sattar Mollah, Director Training, BWDB.

(see also 10.3)

10.6 Technical notes and documents

During the quarter (October-December 1996), the following technical reports were prepared.

WID Section:

- Gender position paper for CPP phase-II, November 1996
- Desk study report on WID/GAD, November 1996
- Guidelines for the gender impact study, December 1996

Institution:

- Report on discussion meetings with sub-compartmental water management committees (draft), November 1996

M&E Section:

- Draft work plan on monitoring & evaluation, November 1996

Economics Section:

- Paper on monitoring & evaluation by Mr. Richard Wiens, November 1996

Environment Section:

- Draft environmental management plan (EMP).

11 ORGANIZATIONAL AND PERSONNEL

11.1 Organizing and management

The project is executed by the Bangladesh Water Development Board (BWDB) of the Ministry of Water Resources. The Water Resources Planning Organization (WARPO) of the same Ministry coordinates and monitors the pilot project activities.

A Steering Committee, constituted at the BWDB, guides and monitors the implementation & progress of the project. This committee, convened by the Chairman BWDB, has as members: Joint Chief, Planning Commission, Member (Implementation), BWDB; Director General, WARPO; Chief Engineer (Central Zone); Superintending Engineer, Design Circle-II; Deputy Secretary (Dev-II), MWR; Team Leader, CPP; First Secretary (Water Sector), Royal Netherlands Embassy and First Secretary (Dev.), German Embassy, Project Director, CPP is the member Secretary of this committee.

At local level, a 79 number Project Council/Compartmental Water Management Committee (CWMC) has recently been formed on July 02, 1996. This includes President and Member-Secretaries of all 15 subcompartments; 5 representatives each of women, landless and fishermen; relevant district level GoB officials, NGO representatives, representative from Tangail Pourashava & members of local Union Parishads. As per guideline of the MoWR regarding Project Council, the DC of Tangail is the Chairman of the Project Council and Sub-Divisional Engineer of the CPP Division has been nominated as the Member-Secretary.

BWDB provides a Project Team for the execution of the project and the Netherlands Technical Assistance Programme provides consultants to formulate plan layout and to advise and assist the Project Team.

11.2 The Project Team

The Project Team is responsible for execution of physical works till June 1998 and then full operation for two years specially during monsoon. In performing the aforesaid works, the responsibilities include:

- surveys
- designs
- tendering
- supervision of construction including quality control
- non-structural intervention such as earthwork through LCS, preventive maintenance works through EMGs, EMP activities, mitigation measures etc.
- operation and maintenance
- monitoring and data collection
- organizational aspects etc.

The Project Director is assisted by one Executive Engineer, one Deputy Director and other support staff and maintains close liasion with the consultant team for overall implementation of the project activities. The Executive Engineer is in-charge of the surveys, construction, O&M and monitoring etc. Beyond the Project Team, BWDB Design Office prepares designs of all the project intervention on the basis of design criteria and relevant data supplied by the consultants.

The Project Director, as per a Govt. Order, is empowered to obtain service from ten other related Govt. agencies located at Tangail.

The staffing arrangements for the project team, in the line of revised TAPP and upto date posting position is shown in Table 11.1.

Table 11.1: Statement of set up of project team as on 30-06-96

Sl. No.	Name of Position	Provided 2nd revised TAPP	Upto-date posting in the project	Vacant
1.	Project Director	1	1	-
2.	Executive Engineer	1	1	-
3.	Deputy Chief Extension Officer	1	-	1
4.	Deputy Director	1	1	-
5.	SDE/Asstt. Engineer	4	4	-
6.	Asstt. Director	1	-	1
7.	Accounts Officer	1	1	-
8.	SAE/Estimator	9	9	-
9.	Divisional Accountant	1	1	-
10.	Extension Overseer	4	4	-
11.	S.A.A	4	3	1
12.	Head Asstt./Head Clerk/U.D Asstt.	2	1	1
13.	Surveyor	4	2	2
14.	Stenographer	1	-	1
15.	Steno-Typist	2	-	2
16.	L.D.A-cum-Typist	10	9	1
17.	Typist	4	3	1
18.	Draftsmen	2	2	-
19.	Work Asstt.	12	5	7
20.	Computer Operator, G. Operator, Photocopier Operator	3	1	2
21.	Driver	4	4	-
22.	M.L.S.S.	20	14	6
23.	Sluice Khalashi	11	7	4
	Total:	99	70	29

In addition, one Agronomist and one Sociologist, hired from DAE, consulting firm DDC Ltd. work with the Project Team. The position of the Sociologist remained vacant since November 1995, Ms. Ferdous Hannan has joined the project as Sociologist in September, 1996 and Mr. Ferdous Azad, Deputy Chief Extension Officer/Agronomist from BWDB has been working since September 1996.

11.3 Consultant team

The consultant team assists and advises the project team in the preparation of plans, the layout of the project and the quality control of the implemented works. Development of conceptual strategies and their testing are of major significance. The team has a major role in providing training to all parties involved in the preparation, operation and evaluation of the implemented works. The consultant covers land and water use, flood control and drainage in the formulation of an integrated water management, socio-economic and institutional aspects, information dissemination, aspects of women in development, environmental issues, fisheries, monitoring and evaluation and other relevant disciplines.

The composition of both expatriate and national consultants remained at full strength.

A new consultants team has started its activities from 1 October 1996. Expatriate inputs were provided by the Monitoring and Evaluation (Mr. H.J. Raad), Quality Control (Mr. J. Fekkes), Institutional Development (Mr. Piet Jan Zylstra, Mr. Koen de Wilde), Watermanagement (Mr. Jan Groot) and Women in Development (Ms. Marianne Nugteren).

12 FINANCIAL STATEMENT

12.1 FA budget and expenditure

Table 12.1: Financial progress RPA (FA) as per 2nd revised TAPP

Sl No	Description of Item	Unit	Total Quantity and Cost as per revised TAPP		Achievement upto June 96	Budget/Achievement for 1996-97			Cumulative upto Dec./96	
			Quantity	Cost (Lakh Tk.)		Revised Budget	Achievement from July to Dec.96	Achievement %	Lakh Tk.	%
1.	Survey & study	1 item	1 item	298.52	186.33	40.00	14.80	37.00	201.13	67.38
2.	Equipment:	-	-	47.72	44.35	3.65	3.85	105.48	48.20	101.01
	a) Levelling instrument	Nos.	6	5.76						
	b) Jeep	Nos.	3	22.16						
	c) Motor cycle	Nos.	10	5.90						
	d) Computer and software	Nos.	3	4.40						
	e) Typewriter	Nos.	8	2.00						
	f) Amonia printing machine	Nos.	1	1.20						
	g) Photocopier	Nos.	3	3.00						
	h) Duplicating machine	Nos.	1	0.90						
	i) Penetro meter	Nos.	2	1.20						
	j) Concrete tests hammer	Nos.	2	1.20						
3.	Construction:									
	a) Regulators	Nos.	15	864.18	774.76	61.00	29.08	47.67	803.84	93.02
	b) Modification of old sluice	Nos.	5	13.14	2.92	2.50	-	0.00	2.92	22.22
	c) Minor regulator	Nos.	44	785.50	563.72	157.00	4.00	2.55	567.72	72.27
	d) Sub-compartmental bridge & culvert	Nos.	33	392.40	292.66	83.00	13.70	16.51	306.36	78.07
	e) Re-excavation of khal/river	Km.	129.83	780.24	212.55	85.00	4.50	5.29	217.05	27.82
	f) Resectioning compartmental embnkt	Km.	68.10	321.56	253.35	61.00	20.08	32.92	273.43	85.03
	g) Tangail Town Drainage Development	Km.	3.00	300.00	-	200.00	-	0.00	-	0.00
	h) Implementation of access road	Km.	3.20	52.36	51.91	-	-	-	51.91	99.14
	i) River bank protection & training works	Km.	5	117.77	113.78	-	-	-	113.78	96.61
	j) Miscellaneous	Nos.	1 item	68.24	5.43	1.50	5.50	366.67	10.93	16.02
	k) Mitigation measure	1 item	1 item	34.61	60.10	65.00	-	0.00	60.10	44.65
	l) O&M during construction	1 item	1 item	639.32	87.18	84.35	12.66	15.00	99.84	15.62
4.	Augmentation of PT	1 item	1 item	114.22	42.60	6.00	2.03	33.83	44.63	39.07
5.	Unforseen cost (minor works)	1 item	L.S	400.00	-	50.00	-	0.00	-	0.00
	Total:			5329.78	2691.64	900.00	110.20	12.24	2801.84	52.57

12.2 GoB fund utilization

Table 12.2: Financial progress GoB as per approved revised TAPP

Sl No	Description of Item	Unit	Total Quantity and Cost as per revised TAPP		Cumulative upto June/96	Budget/Achievement for 1996-97			Cumulative upto Dec/96	
			Quantity	Cost (Lakh Tk.)		Budget 96/97	Achievement from July to Dec./96	Achievement %	Lakh Tk.	%
1.	Land acquisition (ha)	ha.	346	1671.10	828.12	665.00	140.00	21.05	968.12	57.93
2.	GOB establishment	1 item	1 item	658.59	391.90	115.00	27.73	24.11	419.71	63.73
3.	Taxes	1 item	1 item	41.55	13.52	20.00	-	00.00	13.52	32.54
4.	Cost escalation	1 item	1 item	164.66	-	-	-	-	-	0.00
				2535.90	1233.62	800.00	167.73	20.97%	1401.35	55.26

12.3 Reimbursement

Total amount of the reimbursement recommended against FA till 31/12/96 stands at Tk. 274.03 million (Table 20.3). This includes Tk. 8.12 million for Sirajganj Compartment.

For Tangail Compartment, during the quarter reimbursement of Tk. 11.514 million has been recommended, this makes the total amount recommended to the tune of 265.91 million. At the end of the last quarter (July - Sept.) bills of Tk. 5.066 million were pending with the consultant. During the quarter under report, further bills of Tk. 10.973 million have been received.

Table 12.3: Reimbursement recommended against FA till 31/12/96

Division	Reimbursement (million Tk.)		
	Request received	Recommended	Under scrutiny
Tangail Cumulative up to 30 Sept. 96 01.10.96 to 31.12.96	 259.462 10.973	 254.396 11.514	
Total : Tangail	270.435	265.910	4.525
Total : Sirajganj	8.120	8.120	Nil
Grand Total	**278.555**	**274.030**	**4.525**

12.4 TA budget and expenditures

Table 12.4: TA Budget and expenditures for the period from 15 September to 31 December 1996 (cost in DFL, guestimates)

Code No.		BUDGET* FOR 15/9/1996 - 31/12/1996	ACTUAL Expenditure	Exp. %	BALANCE
300	**CONTRACT STAFF COSTS**	802,546	685,714	85%	116.832 -
400	**INVESTMENTS / PURCHASES**	103,400	25,432	25%	77.968 -
500	**OPERATIONAL COSTS**	41,250	38,100	92%	3.150 -
600	**TRAINING & COURSES**	15,760	13,185	82%	2.575
	TOTAL	962,956	762,431	79%	200.525 -

* *Budget allocation according to financial proposal (final phase)*