FLOOD PLAN
COORDINATION
ORGANIZATION
(FPCO)

KREDITANSTALT FÜR
WIEDERAUFBAU (KfW)

CAISSE CENTRALE DE
COOPERATION ECONOMIQUE (CCCE)

BANK PROTECTION AND RIVER TRAINING (AFPM) PILOT PROJECT FAP 21/22

PROGRESS REPORT AND ADMINISTRATIVE & FINANCIAL REPORT NO. 3

JULY TO SEPTEMBER 1992

CONSULTING CONSORTIUM FAP 21/22

RHEIN-RUHR ING.-GES.MBH, DORTMUND/GERMANY

COMPAGNIE NATIONALE DU RHONE, LYON/FRANCE
PROF.DR. LACKNER&PARTNERS, BREMEN/GERMANY
DELFT HYDRAULICS, DELFT/NETHERLANDS

In association with:

BANGLADESH ENGINEERING & TECHNOLOGICAL SERVICES LTD.(BETS)
DESH UPODESH LIMITED (DUL)

BANK PROTECTION AND RIVER TRAINING (AFPM) PILOT PROJECT FAP 21/22

FLOOD PLAN CO-ORDINATION ORGANIZATION (FPCO)

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Consulting Consortium FAP 21/22
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The Chief Engineer
Flood Plan Coordination Organization
7, Green Road
Dhaka

Our Ref: CC/FPCO/L/92-759 October 5, 1992

Subj : **Progress Report/Administrative & Financial Report No. 3**

Dear Sir,

I have pleasure in attaching 5 copies of the Progress Report together with the Administrative and Financial Report No. 3 as discussed.

Please note that, based on the comments to the Interim Report, some additional works have comeup which are described in Chapter 3 of the Progress Report. The additional staffing and costs resulting from these additional works are included in Chapter B.1 and C.4 of the Administrative and Financial Report respectively. The costs are staying well below the contract amount.

Due to the tight schedule I kindly request your approval/response to the proposed procedures as fast as possible, preferably within a week's time, in order to make the necessary arrangements for staffing and negotiating the subcontracts.

Sincerely yours,

Dr H Brühl
Project Director

Encl : 5 copies of the report in caption.

HB/SK

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PILOT PROJECT FAP 21/22

PROGRESS REPORT
30 SEPTEMBER, 1992

List of Contents

BANK PROTECTION (FAP 21) AND RIVER TRAINING/AFPM (FAP 22) PILOT PROJECT

PROGRESS REPORT

(For the period since Interim Report submission to September 30, 1992)

1 GENERAL

1.1 THE PROJECT

After submission of Interim Report, the Bank Protection and River Training/Active Flood Plain Management Studies are investigating means of refining the design and improve the construction/maintenance of stabilization works and also investigating methods of possibly employing the river's own fluvial processes to stabilize its course and to reduce sudden channel modifications. Because of the scales of problems and costs involved, there is large scope for developing cost-effective methods. Experiences of FAP studies like FAP 1 and FAP 9B were utilized in the formulation of basic study criteria.

To achieve the aforesaid goals, a combination of pilot project components FAP 21 and 22 concentrating on the Jamuna, which are interrelated to and independent from each other at the same time are undertaking studies directing towards the practical designs and actual implementation of Test Works and preparation of medium and long-term strategies respectively.

1.2 THE REPORT

As per section 12.01 and Appendix 1 of the Consulting Agreement, a Progress Report is due at the end of 11th month which has been rescheduled to be submitted at the end of 10th month i.e. September, 1992. This report is the Progress Report as indicated above and spells out the work progress of Consulting Services in the period since submission of Interim Report to the end of September, 1992 i.e. 10th month of Consulting period.

The report presents for the two components of the pilot project, a description in brief of the activities performed during this period, a review of the problems and recommendations for the improvements.

1.3 PERSONNEL DEPLOYMENT

Besides five long term expatriate Consultants and their local counterparts continuing works from previous months, short term experts and their local counterparts in the fields of agro-socio-economy took up their assignment for the second time for their mid-period input

leading to final assessment. Also the Advisory Board Members arrived for their mid period contributions. These fieldings of professionals have been done as per Staffing Schedule - Planning Study, see Table 4-2.

Personnel deployment during the period is as below:

A. Expatriate

1 Dr H Brühl, Project Director (home office work and home leave 01.8.92 to 25.8.92)
2 Prof. J F Agema, Advisory Board Member (11.9. to 17.9.92)
2 Prof. R Floss, Advisory Board Member (3.9. to 8.9.92)
2 Prof. Wan Zhaohui, Advisory Board Member (15.9. to 29.9.92)
2 Prof. H J Vollmers, Advisory Board Member (15.9. to 26.9.92)
5.1 Mr K Schröder, TL FAP 21 (Departure 15.9.92)
5.1 Dr H Kramer, Subsoil Engineer (1.9 to 15.9.92) from 16.9. replacing TL FAP 21
6.1 Mr M v d Wal, Modelling Expert (home leave 5.8. to 24.8.92)
7.1 Mr E Doutriaux, Phys. Mod. Expert (departure on home leave 31.8.92)
7.1 Mr E Divet, Replacement Phys. Mod. Expert (arrival 25.8.92)
10.1 Mr J Heise, Surveyor (home leave 29.7. to 30.9.92)
12.1 Mr C Netzeband, Cons. Man. Expert (continued from before)
13.1 Mr C Potin, Socio-economist (arrival 11.9.92)
17.1 Mr F v d Knaap, TL FAP 22 (continued from before)
18.1 Mr E Elizechea, Land Reclamation Expert (arrival 13.9.92)
20.1 Mr P C Lagache, Agri.Dev.Specialist (arrival 11.9.92)

B. Local

4.2 S M Mansur, Deputy Proj. Manager
5.2 A Q M Ali, Hydraulic Design Engr.
6.2 J Islam, Modelling Expert
7.2 Q Saifuddin, Phys. Mod. Expert
9.2 M Salahuddin, Morphologist
10.2 A H M Kamal, Surveyor
11.2 M Haque, Subsoil Expert
12.2 Mohiuddin, Construction Management Expert
13.2 Dr K Nizamuddin, Socio-Economist (took up assignment for second time on 13.9.92)
13.3 M A Jabbar, Land Acq. Specialist (took up assignment for second time on 13.9.92)
13.2 A H Mia, Land Rec. Expert (took up assignment for second time on 13.9.92)
17.3 S R Khan, River Training Engineer-2
19 H I Bhuiyan, Legal Advisor (took up assignment on 15.9.92)

2 TECHNICAL ASPECTS

2.1 ENGINEERING INVESTIGATIONS

Engineering Investigations for the Planning Study Phase of Bank Protection and River Training/AFPM Pilot Project for the Jamuna River started from beginning of the Project and are still continuing. Some investigations are completed, some are being refined with new data and are being prepared for inclusion in the draft final report. Status of these investigations are described briefly below:

- **Morphological studies**: Remote sensing techniques aided by computer are being applied to satellite imageries for the study on morphological predictions and plan form analyses. The study is a continuous process feeding new data and now at a stage of final refinement with the latest available data (imagery).

  The data of the cross-section and the measured discharges near Bahadurabad has ben collected and analyzed. The following parameters and aspects were determined from these data: the conveyance of the whole cross-section and the relative conveyance of the individual channels, the hypothetical cyclicity in the location of the 50% conveyance point in that cross-section and the verification of different prediction methods for hydraulic roughness.

  The analysis of the number of channels in a cross-section was continued with the cross-sectional data of different years.

  The forthcoming results as expected are:

  a. finalization of selection of test sites and areas
  b. determination of the characteristics of the Jamuna River
  c. study of morphological processes in the Jamuna River
  d. verification of future morphological model of planform changes of a braided, sand bed river and
  e. development of AFPM strategies under FAP 22.

- **Agro-Socio-Economic Study**: Two selected sites as reported in the Interim Report viz. Kamarjani (North of Manos Regulator) and Bahadurabad (Belgacha) are being investigated by the agro-socio-economic group to collect informations on present agro-socio-economic data. A cross-section of local people including local public representatives at both the places were interviewed by the group, exchanged opinion and apprised the proposed project for their understanding. Positive responses were received from the local people about the project.

While erosion was severe at Manos Regulator and up at Kamarjani site, it was comparatively mild at Belgacha, the Bahadurabad site. However, further investigations are continuing on these two sites and other probable sites as well and will be finalized and reported in Draft Final Report of FAP 21. Hydraulic Design Engineers both expatriate and local are carefully watching the situation.

- **Topographic and Hydrographic surveys:** Subcontracted topographic and Hydrographic surveys were completed and preparation of maps of the surveyed areas are also complete. The maps are being used for preparation of preliminary design to be presented in the Draft Final Report.

  The Topographic and Hydrographic surveys comprised the following:

  a. Field works
     - i) Erection of pillars
     - ii) Height connection of BM
     - iii) Height connection of pillars
     - iv) Erection of temporary gauges
     - v) Traverse survey
     - vi) Cross-section survey, water
     - vii) Cross-section survey, land

  b. Drawings
     - i) Layout plans
     - ii) Cross-sections

- **Hydrometric measurements:** During the reporting period some hydrometric measurements were carried out in front of the Kamarjani test site and of the Manos river for the purpose of testing the equipment and of having a first idea on the flow velocities and the water depths.

- **Geotechnical Investigations:** Geotechnical investigations were also subcontracted field works, laboratory testing of soil samples and evaluation of soil properties have all been completed. The investigations include the following:

  i) Execution of bore holes, depth 20-40 m
  ii) Extraction of disturbed and undisturbed soil samples from bore holes/adjacent test pits
  iii) Execution of Standard Penetration Test (SPT) at 1.5 m interval
  iv) Execution of Cone Penetration Test (CPT)
  v) Installation of sand pipe piezometers for in-situ soil permeability tests and observation of ground water levels

vi) Laboratory testing of disturbed and undisturbed samples

vii) Compilation of field and laboratory test result including analysis, evaluation and preparation of comprehensive final report.

2.2 MATHEMATICAL MODEL TESTS

Mathematical model tests are carried out by

- 1-D Mathematical modelling using Mike 11 software package
- 2-D Mathematical modelling being carried out at Delft Hydraulics
- Simplified mathematical model for investigation of recurrent AFPM measures.

These model test investigations are continued attempting further refinements to yield desirable results. These are briefly summarized below:

- **1-D Mathematical Modelling**: Using Mike 11 package Modules for Hydrodynamic (HD) and Non-cohesive Sediment Transport (NST), hydrodynamic and morphologic computations are carried out to study the effectivity of recurrent measures for active flood plain management. Calculation of flow at a bifurcation to simulate surface screen and roughness computation for Bahadurabad reach of Jamuna are being currently investigated.

- **2-D Mathematical Modelling**: After analysis of the data of the field surveys in the test sites near Kamarjani and Bahadurabad the set-up and the layout of 2 local scour models were prepared on the basis of the morphologic predictions of future bank lines in these areas. With these data the length and width of the area which is simulated in the 2-dimensional mathematical model is determined. The grid size has been selected mainly on the basis of the size of the test structures and the required computing time. The details of the flow field which should be represented in the mathematical model depend on the size of the test structures.

  A complication for defining the boundaries of the mathematical model is the uncertainty of the predicted future bank lines. It is desirable to have a flexible boundary, that means that without much additional work a new run with a slightly different bank line can be made.

  End of August all data needed to define the bed geometry and the boundary conditions for the mathematical model were available. The preparation of the mathematical model of the test area near Kamarjani started early in September with the preparation of the bed geometry file. First results of the Kamarjani model are expected half October.

In the mean time the preparation of the mathematical model of the test site area near Bahadurabad started mid September and the computations are planned to be completed end of October.

- **Simplified Mathematical Model**: The situation in one single channel subject to a time constant over loading is being investigated by this Simplified Mathematical Model. It is used to serve as a basic tool to describe the aggradation process in an outflanking channel under the condition of redistribution of flow at the bifurcation. This approach is justified due to the 'tailor made' output for a fast analysis to estimate the technical feasibility of using recurrent measures at bifurcations.

2.3 PHYSICAL MODEL TESTS

- Physical model test for investigating the Local Scour Study was undertaken in Delft Hydraulics Laboratory at de Voorst and preliminary results were presented in the Interim Report. Further analyses are being carried out of the collected data and more detailed conclusions and recommendations are being undertaken.

- Another scale model subcontract has been awarded to the River Research Institute, Faridpur to investigate certain hydraulic characterics of Jamuna River sites. Construction of the physical model is complete and calibration test run has just started.

2.4 FILTER TEST RIG INVESTIGATION

A subcontract for Filter Test Rig Investigation has been offered to BUET. Negotiation regarding scopes and value of subcontract failed and till now no progress is seen forthcoming. Future action needs to be taken in consultation with FPCO.

2.5 FAP 21 DESIGN WORKS

Conceptual design of test structures like groynes and revetments are being finalized. Design criteria have been formulated and different alternative designs and drawings are being prepared. Bank protections to Kamarjani will be attempted by construction of 3 groynes and to Belgacha, Bahadurabad with different types of revetments.

2.6 FAP 22 INVESTIGATIONS

Investigation of Recurrent Active Flood Plain Management measures are continued through the simplified mathematical model. Different alternatives of recurrent measures are also being investigated.

2.7 SEMINAR ON FILTER TECHNOLOGY

During the reporting period an internal seminar on Filter Technology was arranged by the Consultant. Internationally reputed and active filter technologists Dr Floss and Dr Heerten and other participants drawn from endusers, designers, researches and manufacturers discussed in detail about mineral granular filters, geosynthetic and geonatural filters.

2.8 CONSTRUCTION MANAGEMENT

Extensive investigations on construction methods prevailing in Bangladesh and locally available construction equipment and materials were carried out. Steps have been taken to assess the capabilities of the local contractors to undertake the protective works. Guidelines are being formulated for the construction method, construction equipment and construction materials for the proposed test works.

2.9 DRAFT FINAL REPORTS

The set-outs of the draft final reports for FAP 21 and FAP 22 have been finalized after detail discussions. Invitations were extended to local professionals to contribute in the preparation and writing of different sections of the reports. The set-outs are shown at the end of the Progress Report after Chapter 4.

3 UPDATED WORK PLAN

3.1 INTRODUCTION

During the discussions with the Client and KfW in September two items came up which would require an adjustment of the work plan and the staffing schedule: (1) The preparation of an additional report with rough cost estimate and basic concept of the FAP 21 test structures recommended including the general approach, time schedule etc., that report to be submitted in mid November. (2) The pre-investigation of two additional tentative test areas viz at Kazipur and Sariakandi, as well as the inclusion of monitoring the works to be carried out under the River Bank Protection I Project of World Bank, in the FAP 21 monitoring programme.

It is understood that the submission of the Draft Final Report shall not by any means be delayed beyond the contractual deadline of January 1992, to allow for the KfW/CCCE appraisal mission. The internal time schedule may however be adopted to the new situation. Furthermore the contract amount of the Planning Study as per the Consulting Agreement may not be exceeded, but use may be made of the contingencies if and when required.

The present statement shall give a quick overview of the consequences of these additional items on the work plan and the staffing schedule as well as on the costs.

Due to the very tight schedule the Consultant kindly requests an as fast response to the proposed procedures as possible, preferably within a week's time, in order to make the necessary arrangements regarding the recruitment/ extension of staff, the negotiation of new subcontract(s) and the amendment of existing ones.

The Consultant further kindly requests to inform him latest end of November, if he shall proceed with the final design of the FAP 21 test structures starting in February 1993. This lead period of 2 months is required as a minimum for the Consultant's staff planning. That is because, as accepted by all parties, the final design must start in early February to allow for awarding construction subcontracts in July/August which are required to start the construction of the first test structures immediately after the monsoon 1993.

3.2 PRELIMINARY FAP 21 INVESTMENT REPORT

The funding agencies, for allocating the funds required for the Test and Implementation Phase, particularly for the construction of the test structures, need to undertake a project appraisal. The mission that will carry out the appraisal will take place in January 1993 for which time they will need the Draft Final Report to be available. However, in order to take fast decisions in that period, preferably by issuing an order to proceed for the Consultant, the Client and the Funding Agencies require beforehand a report to contain rough cost

estimate, basic concept, approach, time schedule etc. for the FAP 21 test structures envisaged. That report would be required by mid November at the occasion of the Bangladesh - German Government negotiations.

The information required in that report were originally anticipated to be produced at a later stage, viz in December 1992 and early in January, 1993, see Fig. 6.1-1 Work Flow Chart of the Interim Report. The Consultant will however be able to reschedule some of his tasks to a later stage in order to provide the capacities for working out the information required by mid November. That implies certain rearrangement as well as double-work for the Consultant and will result in certain additional professional input required.

That holds all the more as the two (spare) test areas are additionally to be pre-investigated at the same time.

The report will be based on the design of the test structures as planned for Kamarjani and Bahadurabad.

3.3 PRE-INVESTIGATION OF ADDITIONAL TEST AREAS

3.3.1 Introduction

It is understood from the comments to the Interim Report received September 20, 1992 that the Consultant is requested to investigate more test areas. The objective would be depending from the authors of the respective comments banks either to have some spare sites in case the currently identified test areas would have to be dropped for morphological reasons (KfW-comments) or to use the funds to cover more sites which may need protection (several other comments). Further the Consultant was requested to include the monitoring of the works to be constructed under the River Bank Protection I Project (financed through the World Bank) within his monitoring programme for the FAP 21 test structures.

The Consultant is firmly believing that more (than 2) sites would not mean necessarily more but rather less knowledge and study results gained through the test structures since too many funds would be required for fixed cost items like site mobilization, access roads, upstream and downstream termination structures. Hence less funds would be available for financing proper test structures, unless the total funds were increased.

There exists however the risk that one or both identified test areas may not longer be suitable for installing test structures after the 1993 monsoon due to unexpected morphological changes, be it by their type or by their magnitude.

A project mission fielded September 20 to 23 found some hints which may indicate that, in Bahadurabad, the magnitude of erosion is smaller than anticipated, an effect which would not come totally unexpected as explained in the Interim Report p.2-14, indicating a possible cut-

off through the mega-char upstream of the area. On the other hand it seems that the erosion in the Kamarjani area may have turned out to be more violent than anticipated. However, the water levels are still too high and there may still happen substantial changes before the end of the present high flow period, so it would be premature to give already final results. In any case the Consultant is planning several activities to monitor the situation (additional control surveys, aerial inspection etc.)

Those thoughts lead certainly to the conclusion that the pre-investigation of two (spare) areas would be recommendable. The two areas envisaged are Kazipur and Sariakandi, both being FAP 1 priority sites.

At least **Kazipur** seems to have relatively high "certainty of attack" for the years to come as was also indicated in the Interim Report. Some few protection works had been done, and a major groyne constructed in 1989 had failed prior to the end of the first high flow. Due to the population's reservations which seemed to exist towards further tests, that area had been excluded from being taken into closer consideration as a FAP 21 test area. In case that the reservations do not exist any longer, Kazipur would probably be a good test area.

Sariakandi is one of the high priority sites in FAP 1 and is partly included in the River Bank Protection I Project, under consideration to be financed through the World Bank. In fact, Sariakandi represents the northern end of an about 10 km long stretch along the Jamuna river where a risk of a short cut to the Bangali River exists, the southern end of that stretch being Mathurapara. The Consultant understood that in the present phase of negotiations between GoB and the World Bank the southern portion of the endangered stretch is given the highest priority and only that would be included in the project. That would leave space further north, close to Sariakandi for additional FAP 21 test structures.

3.3.2 Implication for the Work Plan

The pre-investigation of the two additional areas will be based as far as possible on existing data which will have to be updated to allow the conclusions required for the Project and to create the basis for a further investigation in case of the new areas coming into close consideration. Since both areas have been investigated within the priority site study of FAP 1 the most recent information would be found there.

The information required includes but is not necessarily limited to

- last surveys, if possible previous ones,
- subsoil data, including boring profiles and
- results of model tests.

It is assumed that all available information will be made fully available to the Consultant without delay through the Client or the FAP 1 consultant. Based on that existing information the Consultant will require to proceed with his own investigation as required for a pre-feasibility level study for the Kazipur area and a more general pre-investigation for Sariakandi.

Pre-investigation of the test areas of Kazipur and Sariakandi would require the following additional activities, listed according to their chronological sequence:

(i) Field surveys to update the existing information on topography and hydrography. At the present stage no full survey is assumed to be required but only some checking of certain representative and/or crucial sections for rough updating. Detailed surveys would further require more time than is available.

The surveys for the additional test areas would be subcontracted to a survey company and supervised by the Project's surveyors. Some hydrometric surveys which had been anticipated may be skipped at the present time and may partially be replaced by those undertaken by FAP 24, e.g. in October in the Bahadurabad area.

Soil investigations are assumed to be existing from the FAP 1 investigations and are hence not planned in the present context

(ii) Additional runs of the 2-D mathematical flow model

(iii) Additional morphological analysis in the remote sensing study with regards to forecasting the future bank lines

(iv) Certain reconstruction of the existing (schematized) models of Bahadurabad and Kamarjani, and undertaking some physical model tests

(v) Specification of site related hydrologic design events

(vi) Preparing the preliminary design

(vii) Cost estimation.

Due to the time schedule required, particularly since the results of field investigations will not be available earlier than mid November, the other activities will have to run partly parallel to the activities for the primary test areas. The tests and investigations for Bahadurabad and Kamarjani will however have priority. The results for the additional test areas will, therefore, be presented in an additional report, to be submitted after the main Draft Final Report FAP 21 in order to avoid any delay for the latter one.

3.4 MONITORING WORKS UNDER RIVER BANK PROTECTION I PROJECT

The River Bank Protection I Project (RBPIP) works can be regarded as the upper end of the variable safety standards for the FAP 21 test structures. Hence, the design of the monitoring systems and procedures for the works to be constructed under the RBPIP shall be including the same main features as the monitoring of the FAP 21 test structures.

This will require some additional input by

(i) studying in more detail these works, including discussions with the consultants working for the respective works

(ii) planning the additional monitoring techniques and estimating their costs.

It is assumed that the Consultant will have free access to all documentation related to these works including final designs and tender documents if existing.

3.5 TRANSITION FROM PLANNING STUDY TO TEST AND IMPLEMENTATION PHASE

According to the general time frame set forth in the ToR, the Consultant's proposal and the Scope of Works had anticipated an immediate transition between the two phases, without an interruption of the Consultant's activities and with a slight overlapping: the Draft Final Report FAP 21 was due to be submitted End November 1992 and would be reviewed, commented and approved until end January 1993. The preparation of the Final Report, by including the agreed modifications and/or amendments would have started in early February, as shall start the Test and Implementation Phase. That date is crucial for allowing the construction of the test works at the first site in winter 1993/1994.

The slightly delayed date of commencement will result in the submission of the Draft Final Report FAP 21 in mid January and a reviewing, commenting and approving phase reduced to 6 weeks ending February 1993, i.e. already at the end of the first month of the Test and Implementation Phase.

The experiences of the Project showed that reviewing and commenting the reports by the Client - and the GoB review committee - take much longer than the anticipated 4 to 6 weeks. Hence it can be expected that the Consultant will receive the approval of the Draft Final Report including the agreed modifications and/or amendments several months after commencing the Test and Implementation Phase early February.

Recommendation

To avoid any possible confusion in planning the works and scheduling the staff, the Consultant recommends - assuming that the Test and Implementation Phase would commence on time on 1st February 1993 - to end the Planning Study Phase on 31st January 1993. The Final Report would be edited during the Test and Implementation Phases but without formal overlapping. The proposed procedure is also advantageous with respect to a workshop the Client wishes to be held for the Project, the rule up to now being that on the workshop all major comments shall be discussed in order to prepare the jointly agreed modifications and/or amendments to the draft final reports.

3.6 UPDATED WORK FLOW CHART

The updated Work Flow Chart Table 3-1 is based on the additional activities described above as well as reflecting some internal adjustments of the schedule of ongoing activities which became effective in the course of the execution of the Planning Study. It also reflects the Consultant's proposal for a clear temporal separation of the Planning Study and the Test and Implementation Phase.

The basic modification - besides adding some activities related to the additional works - is that the submittal date of the Draft Final Report FAP 22 is shifted from mid November to mid December. The Draft Final Report FAP 21 will be submitted on mid January 1993 as scheduled before and as required for the appraisal mission.

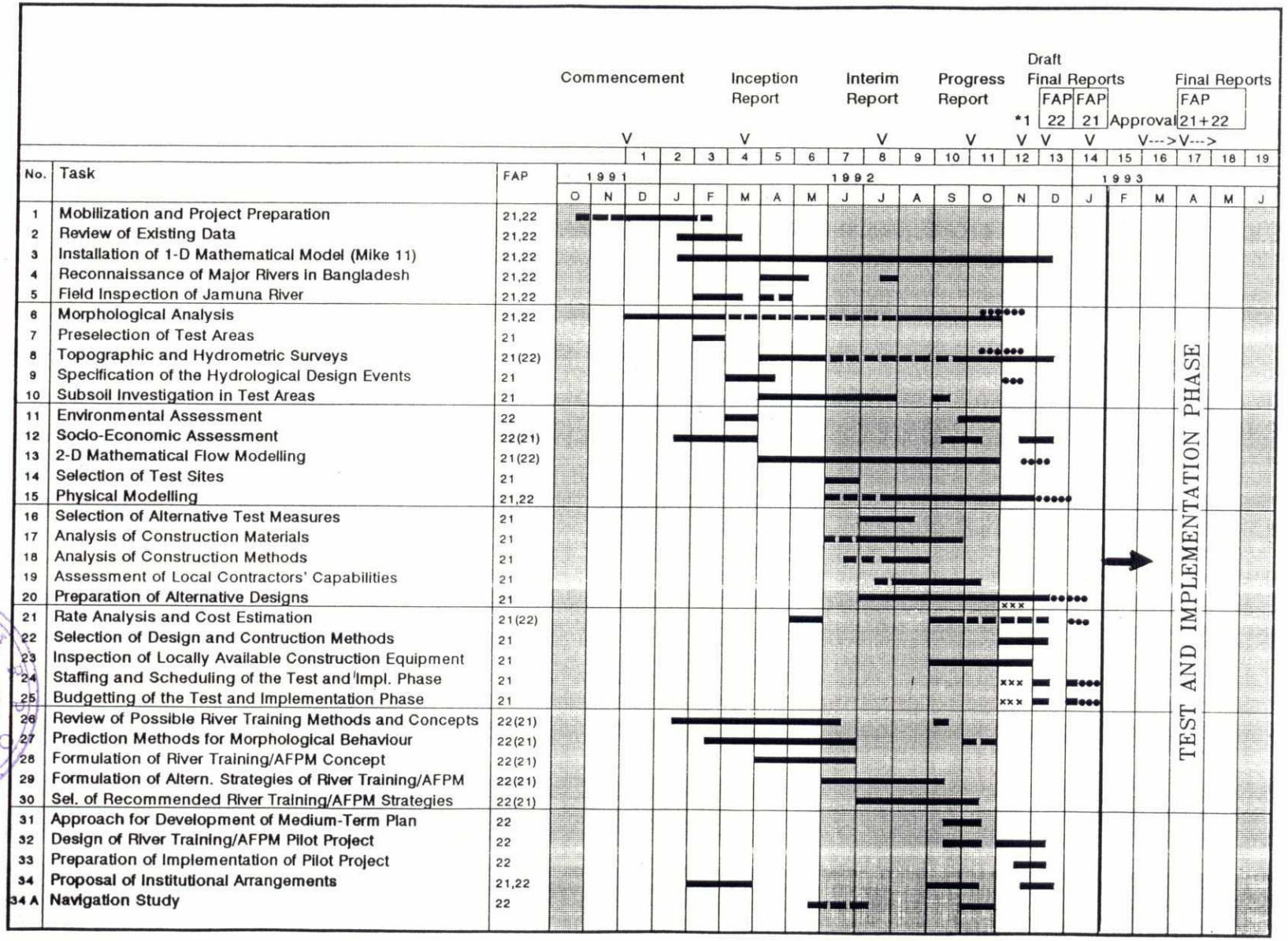
The separate report on the investigations for the additional test areas will be submitted separately from the Draft Final Report FAP 21 until End January 1993.

After reviewing and commenting the two Draft Final Reports and the report on the investigations for the additional test areas, the agreed modifications and/or amendments will be incorporated in the Final Report, the date of submittal mainly depending of the time required to receive and discuss the comments and to agree on the adoptions.

FAP 21 / 22 WORK FLOW CHART - PLANNING STUDY
REVISION NO 3, PROGRESS REPORT

TABLE 3.1

30 SEPTEMBER 1992



No.	Task	FAP
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4	Reconnaissance of Major Rivers in Bangladesh	21,22
5	Field Inspection of Jamuna River	21,22
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●●● Activities for preinvestigation of additional test areas
××× Activities for preliminary FAP 21 Investment Report

Monsoon

*1 PRELIMINARY FAP 21 INVESTMENT REPORT

4 UPDATED STAFFING SCHEDULE

The updated Staffing Schedule in Table 4-2 reflects both the modifications and additions resulting from the updated work plan as described in the preceding chapter and an updating which results from some adjustment of the personnel during the execution of the works.

The additional activities as described in Chapter 3, are reflected in the staffing schedule in such a way that either some staff's deployment will be extended or in having two additional staff included to cope with the additional work. The latter refers on the one hand, to a senior hydraulic design engineer for the pre-investigations of the test structures at the additional sites and for catching up the time required for preparing the preliminary FAP 21 Investment Report and, on the other hand, an additional river training engineer to cope with the additional work arising on that field due to the involvement of several staff (viz. the modelling experts and the morphologist) in the additional pre-investigations.

The internal adjustments in the course of carrying out the Planning Study are mainly in the tune of 1/2 man-month with the exception of the Mechanical Engineer whose input is felt to be needed only for about one month the present phase, if at all. The activities anticipated for him could be taken over by the Construction Management Specialist. The Mechanical Engineer will be required during the Test and Implementation Phase for choosing specific local construction equipment for the execution of the works, identifying the spares and the type of repairs required and for determining the technical specifications for new equipment to be purchased. For further details see the table in Chapter B.1 of the Administrative Financial Report No.3.

The Table 4-1 is showing the Staffing Schedule as per the Interim Report for the sake of comparison.

FAP 21/22 STAFFING SCHEDULE-PLANNING STUDY
REVISION NO 2, AGREED AFTER INCEPTION REPORT

TABLE 4-1

15 JULY 1992

MILESTONES : COMMENCEMENT OF SERVICES PREMOBILIZATION; MOBILIZATION; INCEPTION REPORT; INTERIM REPORT; PROGRESS REPORT; DRAFT FINAL REPORT FAP 22; FAP 21; APPROVAL; FINAL REPORT FAP 21 + FAP 22

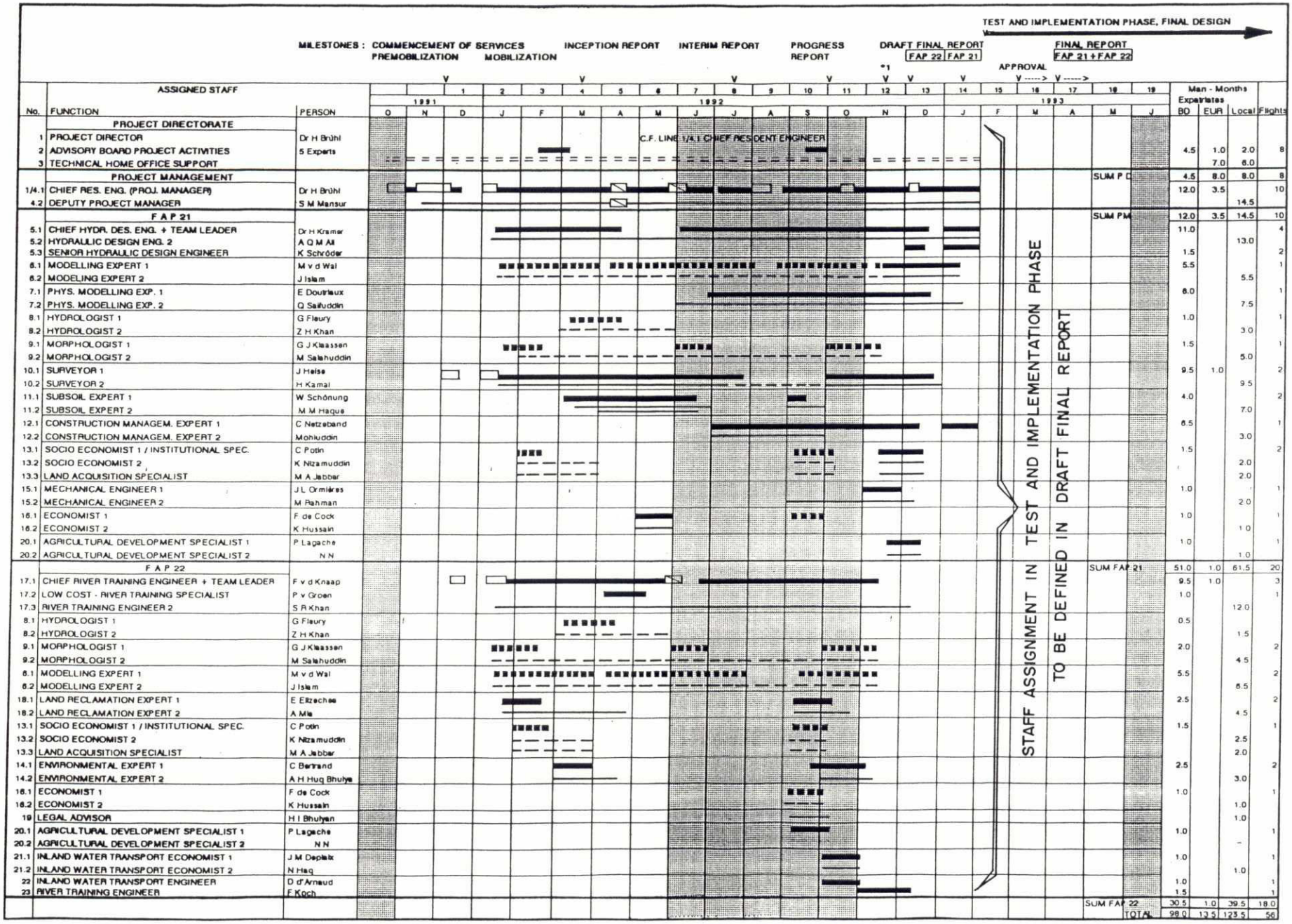
No.	FUNCTION	PERSON	Man-Months Expatriates BD	EUR	Local	Flights
	PROJECT DIRECTORATE					
1	PROJECT DIRECTORATE	Dr H Brühl				
2	ADVISORY BOARD PROJECT ACTIVITIES	5 Experts	5.0	1.0	2.0	10
3	TECHNICAL HOME OFFICE SUPPORT				7.0	
					6.0	
			SUM P D	5.0	8.0	8.0	10
	PROJECT MANAGEMENT					
1/4.1	CHIEF RES. ENG. (PROJ. MANAGER)	Dr H Brühl	11.0	3.5		11
4.2	DEPUTY PROJECT MANAGER	S M Maneur			15.5	
			SUM PM	11.0	3.5	15.5	11
	F A P 21	K. Schröder				
5.1	CHIEF HYDR. DES. ENG. + TEAM LEADER	H Schwenk	10.5	-		4
5.2	HYDRAULIC DESIGN ENG. 2	A Q M Ali			14.5	
6.1	MODELLING EXPERT 1	M v d Wal	4.5	-		1
6.2	MODELING EXPERT 2	J Islam			4.5	
7.1	PHYS. MODELLING EXP. 1	E Doutriaux	5.0	-		1
7.2	PHYS. MODELLING EXP. 2	Q Saifuddin			6.5	
8.1	HYDROLOGIST 1	G Fleury	1.0	-		1
8.2	HYDROLOGIST 2	Z H Khan			3.0	
9.1	MORPHOLOGIST 1	G J Klaassen	1.0	-		1
9.2	MORPHOLOGIST 2	M Salahuddin			3.0	
10.1	SURVEYOR 1	J Heise	9.0	1.0		2
10.2	SURVEYOR 2	H Kamal			9.5	
11.1	SUBSOIL EXPERT 1	W Schönung	4.0	-		2
11.2	SUBSOIL EXPERT 2	M M Haque			7.0	
12.1	CONSTRUCTION MANAGEM. EXPERT 1	C Netzeband	6.0	-		1
12.2	CONSTRUCTION MANAGEM. EXPERT 2	A N Chowdhury			3.0	
13.1	SOCIO ECONOMIST 1 / INSTITUTIONAL SPEC.	C Potin	1.5	-		1
13.2	SOCIO ECONOMIST 2	K Nizamuddin			2.0	
13.3	LAND ACQUISITION SPECIALIST	M A Jabbar			2.0	
15.1	MECHANICAL ENGINEER 1	J L Ormières	3.0	-		1
15.2	MECHANICAL ENGINEER 2	M Rahman			4.0	
16.1	ECONOMIST 1	F de Cock	1.0	-		1
16.2	ECONOMIST 2	K Hussain			1.0	
20.1	AGRICULTURAL DEVELOPMENT SPECIALIST 1		1.0			1
20.2	AGRICULTURAL DEVELOPMENT SPECIALIST 2				1.0	
			SUM FAP 21	47.5	1.0	61.0	17
	F A P 22					
17.1	CHIEF RIVER TRAINING ENGINEER + TEAM LEADER	F v d Knaap	10.0	1.0		3
17.2	LOW COST - RIVER TRAINING SPECIALIST	P v Groen	2.0	-		2
17.3	RIVER TRAINING ENGINEER 2	S I Chowdhury			11.0	
8.1	HYDROLOGIST 1	G Fleury	0.5	-		-
8.2	HYDROLOGIST 2	Z H Khan			1.5	
9.1	MORPHOLOGIST 1	G J Klaassen	2.0	-		2
9.2	MORPHOLOGIST 2	M Badiuzzaman			2.5	
6.1	MODELLING EXPERT 1	M v d Wal	5.5	-		2
6.2	MODELLING EXPERT 2	J Islam			6.5	
18.1	LAND RECLAMATION EXPERT 1	E Elizochea	2.0	-		2
18.2	LAND RECLAMATION EXPERT 2	A Mia			4.5	
13.1	SOCIO ECONOMIST 1 / INSTITUTIONAL SPEC.	C Potin	1.5	-		1
13.2	SOCIO ECONOMIST 2	K Nizamuddin			2.5	
13.3	LAND ACQUISITION SPECIALIST	M A Jabbar			2.0	
14.1	ENVIRONMENTAL EXPERT 1	C Bertrand	2.0	-		2
14.2	ENVIRONMENTAL EXPERT 2	A H Huq Bhuiya			3.0	
16.1	ECONOMIST 1	F de Cock	1.0	-		1
16.2	ECONOMIST 2	K Hussain			1.0	
19	LEGAL ADVISOR	H I Bhuiyan			1.0	
20.1	AGRICULTURAL DEVELOPMENT SPECIALIST 1					1
20.2	AGRICULTURAL DEVELOPMENT SPECIALIST 2		1.0		1.0	1
21.1	INLAND WATER TRANSPORT ECONOMIST 1		1.0		2.0	
21.2	INLAND WATER TRANSPORT ECONOMIST 2					
			SUM FAP 22	28.5	1.0	38.5	18
			TOTAL	92.0	13.5	123.0	56

MONSOON — IN EUROPE — IN BANGLADESH — STUDY TOUR

TABLE 4 - 2

FAP 21/22 STAFFING SCHEDULE - PLANNING STUDY
REVISION NO 3, PROGRESS REPORT

30 SEPTEMBER 1992



No.	FUNCTION	PERSON	Man - Months Expatriates BD	EUR	Local	Flights
	PROJECT DIRECTORATE					
1	PROJECT DIRECTOR	Dr H Brühl				
2	ADVISORY BOARD PROJECT ACTIVITIES	5 Experts	4.5	1.0	2.0	8
3	TECHNICAL HOME OFFICE SUPPORT			7.0	6.0	
	PROJECT MANAGEMENT		4.5	8.0	8.0	8
1/4.1	CHIEF RES. ENG. (PROJ. MANAGER)	Dr H Brühl	12.0	3.5		10
4.2	DEPUTY PROJECT MANAGER	S M Mansur			14.5	
	F A P 21		12.0	3.5	14.5	10
5.1	CHIEF HYDR. DES. ENG. + TEAM LEADER	Dr H Kramer	11.0			4
5.2	HYDRAULIC DESIGN ENG. 2	A Q M Ali			13.0	
5.3	SENIOR HYDRAULIC DESIGN ENGINEER	K Schröder	1.5			2
6.1	MODELLING EXPERT 1	M v d Wal	5.5			1
6.2	MODELING EXPERT 2	J Islam			5.5	
7.1	PHYS. MODELLING EXP. 1	E Doutrieux	6.0			1
7.2	PHYS. MODELLING EXP. 2	Q Saifuddin			7.5	
8.1	HYDROLOGIST 1	G Fleury	1.0			1
8.2	HYDROLOGIST 2	Z H Khan			3.0	
9.1	MORPHOLOGIST 1	G J Klaassen	1.5			1
9.2	MORPHOLOGIST 2	M Salahuddin			5.0	
10.1	SURVEYOR 1	J Heise	9.5	1.0		2
10.2	SURVEYOR 2	H Kamal			9.5	
11.1	SUBSOIL EXPERT 1	W Schönung	4.0			2
11.2	SUBSOIL EXPERT 2	M M Haque			7.0	
12.1	CONSTRUCTION MANAGEM. EXPERT 1	C Netzeband	6.5			1
12.2	CONSTRUCTION MANAGEM. EXPERT 2	Mohiuddin			3.0	
13.1	SOCIO ECONOMIST 1 / INSTITUTIONAL SPEC.	C Potin	1.5			2
13.2	SOCIO ECONOMIST 2	K Nizamuddin			2.0	
13.3	LAND ACQUISITION SPECIALIST	M A Jabbar			2.0	
15.1	MECHANICAL ENGINEER 1	J L Ormières	1.0			1
15.2	MECHANICAL ENGINEER 2	M Rahman			2.0	
16.1	ECONOMIST 1	F de Cock	1.0			1
16.2	ECONOMIST 2	K Hussain			1.0	
20.1	AGRICULTURAL DEVELOPMENT SPECIALIST 1	P Lagache	1.0			1
20.2	AGRICULTURAL DEVELOPMENT SPECIALIST 2	N.N.			1.0	
	F A P 22		51.0	1.0	61.5	20
17.1	CHIEF RIVER TRAINING ENGINEER + TEAM LEADER	F v d Knaap	9.5	1.0		3
17.2	LOW COST - RIVER TRAINING SPECIALIST	P v Groen	1.0			1
17.3	RIVER TRAINING ENGINEER 2	S R Khan			12.0	
8.1	HYDROLOGIST 1	G Fleury	0.5			
8.2	HYDROLOGIST 2	Z H Khan			1.5	
9.1	MORPHOLOGIST 1	G J Klaassen	2.0			2
9.2	MORPHOLOGIST 2	M Salahuddin			4.5	
6.1	MODELLING EXPERT 1	M v d Wal	5.5			2
6.2	MODELLING EXPERT 2	J Islam			6.5	
18.1	LAND RECLAMATION EXPERT 1	E Elizechee	2.5			2
18.2	LAND RECLAMATION EXPERT 2	A Mia			4.5	
13.1	SOCIO ECONOMIST 1 / INSTITUTIONAL SPEC.	C Potin	1.5			1
13.2	SOCIO ECONOMIST 2	K Nizamuddin			2.5	
13.3	LAND ACQUISITION SPECIALIST	M A Jabbar			2.0	
14.1	ENVIRONMENTAL EXPERT 1	C Bertrand	2.5			2
14.2	ENVIRONMENTAL EXPERT 2	A H Huq Bhuiya			3.0	
16.1	ECONOMIST 1	F de Cock	1.0			1
16.2	ECONOMIST 2	K Hussain			1.0	
19	LEGAL ADVISOR	H I Bhuiyan			1.0	
20.1	AGRICULTURAL DEVELOPMENT SPECIALIST 1	P Lagache	1.0			1
20.2	AGRICULTURAL DEVELOPMENT SPECIALIST 2	N.N.			-	
21.1	INLAND WATER TRANSPORT ECONOMIST 1	J M Deplaix	1.0			1
21.2	INLAND WATER TRANSPORT ECONOMIST 2	N Haq			1.0	
22	INLAND WATER TRANSPORT ENGINEER	D d'Arneud	1.0			1
23	RIVER TRAINING ENGINEER	F Koch	1.5			1
			SUM FAP 22 30.5	1.0	39.5	18.0
			TOTAL 98.0	13.5	123.5	56

MONSOON IN EUROPE IN BANGLADESH STUDY TOUR *1 PRELIMINARY FAP 21 INVESMENT REPORT

APPENDIX

CONTENTS OF DRAFT FINAL REPORTS

Bank Protection Pilot Project (FAP 21)

DRAFT FINAL REPORT PLANNING STUDY
January 1993

CONTENTS

* Annexes referring to FAP 22 component only: submitted in FAP 22 Draft Final Report

River Training/AFPM Pilot Project (FAP 22)

DRAFT FINAL REPORT PLANNING STUDY
November 1992

CONTENTS

BANK PROTECTION AND RIVER TRAINING (AFPM)
PILOT PROJECT FAP 21/22

ADMINISTRATIVE AND FINANCIAL REPORT NO.3
30 SEPTEMBER 1992

List of Contents

A INTRODUCTION

1 BACKGROUND

The Project was awarded by the Flood Plan Coordination Organization (FPCO) represented by the Kreditanstalt für Wiederaufbau (KfW) to the Joint Venture Rhein-Ruhr Ingenieur-GesellschaftmbH as lead partner, Compagnie Nationale du Rhone, Prof.Dr. Lackner & Partners and Delft Hydraulics in association with Bangladesh Engineering and Technological Services Ltd. (BETS) and Desh Upodesh Ltd. (DUL).

The Consultancy Agreement was signed on October 14, 1991. The date of commencement was fixed on December 1, 1991.

The present Administrative and Financial Report No.3 covers the period since the signature of the Agreement until September 30, 1992.

The report shall give an information on some important non-technical matters, particularly on staff deployment, subcontracts and schedule of finances, especially with regard to possible modifications in relation to the Agreement. The administrative and financial reports are not intended to serve as a direct basis for billing and/or balancing the Project. That will be done, according to the Consulting Agreement, when presenting the evidences for the final installment after finalizing all the services for the Planning Study.

2 IMPORTANT DATES AND EVENTS

06.05.1991	Presentation of Proposal
14.10.1991	Signature of Consulting Agreement
13.01.1992	Start of expatriate staff deployment in Bangladesh
01.03. to 05.03.1992	2nd GOB-WB Conference on Flood Action Plan
02.03.1992	Circulation and discussion of the draft of the Technical Report No.1 on Pre-Selection of Test Areas
14.03.1992	Official handing over of the Technical Report No.1
19.03.1992	General Meeting in FPCO on the Preselection of Test Areas
21.03.1992	Submission of the Inception Report
21.03.1992	Approval of Test Areas
28.03.1992	Subcontract signed for subsoil investigations
02.04.1992, 08.04.1992	Subcontracts signed for topographic and hydrographic surveys

04.04. to 19.04.1992	Study Tour to Europe including attendance of 5th Symposium on River Sedimentation, Karlsruhe, Germany
21.05.1992	Submission of the Administrative and Financial Report No.1
22.05. to 09.06.1992	Braided Rivers Study Tour to the Yellow and Yangtze Kiang Rivers in China and the Mississippi River in U.S.A.
16.07.1992	Submission of Interim Report
22.07.1992	Received Comments to Inception Report
26.07.1992	Subcontract signed for physical model investigations
01.09.1992	Joint Meeting of FPCO/KfW with Project on Interim Report
20.09.1992	Received comments to Interim Report

B ADMINISTRATIVE SUBJECTS

1 STAFFING

1.1 PROFESSIONAL STAFF FIELDED

As per the Consulting Agreement the fees for the professional staff will be paid in accordance to the time actually spent on the project. The cost for local support staff is included in the office running costs.

The assignment periods of the expatriate and the local professional staff for the reporting period are given in Tables B.1-1 and B.1-2, respectively.

1.2 STAFF SCHEDULE

Table B.1-3 of the present report is showing the Revision 3 of the Staffing Schedule and includes the modifications incurred due to the additional investigations as described in Chapters 3 and 4 of the Progress Report and through minor changes in the course of executing the Project. The modifications compared to the Staffing Schedule Revision-2 are listed in the table on page B-2.

Modifications of staff due to additional works (1) and to general adjustments (2)

Expatriate Staff

Sl. No.	Function	Person	(1) mm	(2) mm
1/4.1	Project Director	Dr H Brühl	+ 1.0	
2	Advisory Board			- 0.5
5.1	Team Leader FAP 21	Dr H Kramer	+ 0.5	
5.3	Senior Hydraulic Engineer	K Schröder	+ 1.5	
6.1	Modelling Expert	M v d Wal	+ 1.0	
7.1	Physical Model Expert	E Doutriaux	+ 1.0	
9.1	Morphologist	G J Klaassen		+ 0.5
10.1	Surveyor	J Heise		+ 0.5
12.1	Construction Manag. Specialist	C Netzeband	+ 0.5	
14.1	Environmentalist	C Bertand		+ 0.5
15.1	Mechanical Engineer	L Ormières		- 2.0
17.1	Team Leader FAP 22	F v d Knaap		- 0.5
18.1	Land Reclamation Expert	E Elizechea		+ 0.5
23	River Training Engineer	F Koch	+ 1.5	
			+ 7.0	- 1.0

Local Staff

Sl. No.	Function	Person	(1) mm	(2) mm
4.2	Deputy Project Manager	S M Mansur		- 1.0
5.2	Hydraulic Design Engineer-2	A Q M Ali		- 1.5
6.2	Modelling Expert-2	Jahangir Islam	+ 1.0	
7.2	Physical Modelling Expert-2	Q Saifuddin	+ 1.0	
9.2	Morphologist-2	M Salahuddin	+ 1.0	+ 3.0
15.2	Mechanical Engineer-2	M Rahaman		- 2.0
17.3	River Training Engineer-2	S R Khan	+ 1.0	
20.2	Agricultural Dev. Specialist-2	NN		- 1.0
21.2	IWT Economist-2	N Haq		- 1.0
			+ 4.0	- 3.5

Table B.1-1

EXPATRIATE PROFESSIONAL STAFF
Fielded up to September 30, 1992

No.	Function	Name	Time Spent	Assignment Breakdown				Total Man - Months **			
				Full Months	+ Working Days	+ Travel Days	− Leave Days	Fees ***	Allowance ***	Hotel Item 2.4	House Item 2.4
1/4.1	Project Director	Dr H Brühl	10/91 - 01/92 *	2.00				2.00			
			01.11.91 - 09.11.91		9	4		0.43			
			05.12.91 - 14.12.91		10	4		0.47			
			13.01.92 - 31.07.92	6.00	19	4	3	6.67			
			08/92	0.50				0.50			
			26.08.92 - 30.09.92	1.00	5	2		1.23	11.30	8.80	1.23	8.00
2	Advisory Board	Various	01/92 - 09/92 *	-	25			1.00			
2.1	- do -	Prof. Bouvard	24.02.92 - 09.03.92	-	16	4	-	0.67			
2.2	- do -	Prof. Vollmers	24.02.92 - 09.03.92	-	16	4	-	0.67			
2.2	- do -	Prof. Vollmers	15.09.92 - 26.09.92	-	12	4	-	0.53			
2.3	- do -	Prof. Wan	14.02.92 - 08.03.92	-	25	4	-	0.97			
2.3	- do -	Prof. Wan	15.09.92 - 29.09.92	-	15	4	-	0.63			
2.4	- do -	Prof. Floss	03.09.92 - 08.09.92	-	6	4	-	0.33			
2.5	- do -	Prof. Agema	11.09.92 - 17.09.92	-	7	4	-	0.37	5.17	4.17	3.23	
3	Technical Home Office Support	Various	12/91 - 09/92 *	5.00					5.00			
5.1	Team Leader FAP 21	H Schwenk	17.01.92 - 14.04.92	2.00	28	4		2.93				
		K Schröder	01.06.92 - 15.09.92	3.00	15	4		3.63				
		Dr H Kramer	16.09.92 - 30.09.92	-	15	2		0.57	7.13	7.13	6.80	
6.1	Modelling Expert 1	M v d Wal	18.01.91 - 04.08.92	6.00	17	4	4	6.57				
			25.08.91 - 30.09.92	1.00	6	2		1.27	7.84	7.84	0.70	8.00
7.1	Physical Modelling Expert 1	E Doutriaux/E Divet	30.06.92 - 30.09.92	3.00	1	2	-		3.10	3.10	3.03	
8.1	Hydrologist 1	G Fleury	06.03.92 - 16.04.92	1.00	11	4			1.50	1.50	1.37	
9.1	Morphologist 1	G J Klaassen	22.01.92 - 25.02.92	1.00	4	4		1.27				
			02.06.92 - 30.06.92	-	29	4		1.10	2.37	2.37	2.10	
10.1	Surveyor 1	J Heise	12/91 + 01/91 *	1.00				1.00				
			13.01.92 - 28.07.92	6.00	16	4	-	6.67	7.67	6.67	6.54	
			01.09.92 - 30.09.92	-								
11.1	Subsoil Expert 1	W Schönung	04.03.92 - 16.06.92	3.00	13	4	-	3.57				
		H Kramer	01.09.92 - 15.09.92	-	15		-	0.50	4.07	4.07	3.94	
12.1	Construction Management Expert 1	C Netzeband	02.07.92 - 30.09.92	2.00	29	2	-		2.97	2.97	2.90	
13.1	Socio Economist 1	C Potin	03.02.92 - 25.02.92	-	23	4	-	0.90				
			10.09.92 - 30.09.92	-	21	2	-	0.77	1.67	1.67	1.47	
14.1	Environmental Expert 1	C Bertrand	01.03.92 - 28.03.92	-	28	4	-	1.07				
			27.09.92 - 30.09.92	-	4	2	-	0.20	1.27	1.27	1.07	
15.1	Mechanical Engineer 1	L Ormières										
16.1	Economist 1	F de Cock	06.05.92 - 04.06.92	-	29	4	-		1.10	1.10	0.97	
17.1	Team Leader FAP 22	F v d Knaap	12/91 + 01/92 *	1.00				1.00				
			25.01.92 - 30.09.92	8.00	6	4	9	8.03	9.03	8.03	0.50	8.00
17.2	Low Cost River Training Specialist	P v Groen	07.04.92 - 02.05.92	-	26	4	-		1.00	1.00	0.87	
18.1	Land Reclamation Expert 1	E Eltzechea	16.01.92 - 14.02.92	-	28	4	-	1.07				
			13.09.92 - 30.09.92	-	18	2	-	0.67	1.74	1.74	1.54	
20.1	Agricultural Dev. Specialist	P Lagache	10.09.92 - 30.09.92	-	21	2	-		0.77	0.77	0.7	
21.1	IWT Economist	J M Deplaix										
22	IWT Engineer	D d'Arnaud										
								74.70	**64.20**	**38.96**	**24.00**	

* Home Office Work ** Decimal fractions of months are band on 30 days/month
*** Including additional 2X2 days for each round trip

Table B.1-2

LOCAL PROFESSIONAL STAFF

Fielded up to September 30, 1992

No.	Function	Person	Assignment		
			From	To	Total Month
2	Advisory Board	(BUET)			
3	Technical Home Office Support	Dr S K Chowdhury / A S M Quasem	Mid Oct. '91	30.09.92	5.00
4.2	Dy. Project Manager	S M Mansur	15.11.91	30.09.92	10.53
5.2	Hydraul. Design Engineer - 2	A Q M Ali	08.01.92	30.09.92	8.80
6.2	Modelling Expert - 2	Jahangir Islam	01.02.92	30.09.92	8.00
7.2	Physical Modelling Expert - 2	Q Saifuddin	01.06.92	30.09.92	4.00
8.2	Hydrologist - 2	Z H Khan	02.02.92	02.05.92	3.00
9.2	Morphologist - 2	Q Saifuddin /	01.02.92	31.05.92	4.00
		M Salahuddin *	01.06.92	30.09.92	4.00
10.2	Surveyor - 2	A H M Kamal	15.01.92	22.07.92	6.30
11.2	Subsoil Engineer - 2	Mazharul Haque	11.03.92	19.07.92	4.87
11.3	Subsoil Engineer - 3	Ayub Hasan	29.03.92	18.06.92	2.30
12.2	Construction Management Specialist - 2	Mohiuddin	06.07.92	30.09.92	2.83
13.2	Socio-Economist	K Nizamuddin	01.02.92	31.03.92	2.00
			13.09.92	30.09.92	0.60 2.60
13.3	Land Acquis. Specialist	M A Jabbar	02.02.92	31.03.92	1.93
			13.09.92	30.09.92	0.60 2.53
14.2	Environmental Engineer - 2	A H Bhuiya	01.03.92	25.03.92	0.83
15.2	Mechanical Engineer - 2	M Rahman			
16.2	Economist - 2	M L Rahman	14.05.92	13.06.92	1.00
17.3	River Training Engineer - 2	S I Chowdhury / S R Khan	15.01.92	30.09.92	8.57
18.2	Land Reclamation Expert - 2	Abul Hashem Miah	15.01.92	15.04.92	3.03
			13.09.92	30.09.92	0.60 3.63
19	Legal Advisor	H I Bhuiyan	16.09.92	30.09.92	0.50
20.2	Agricultural Development Specialist-2	NN			
21.2	IWT Economist-2	N Haq			

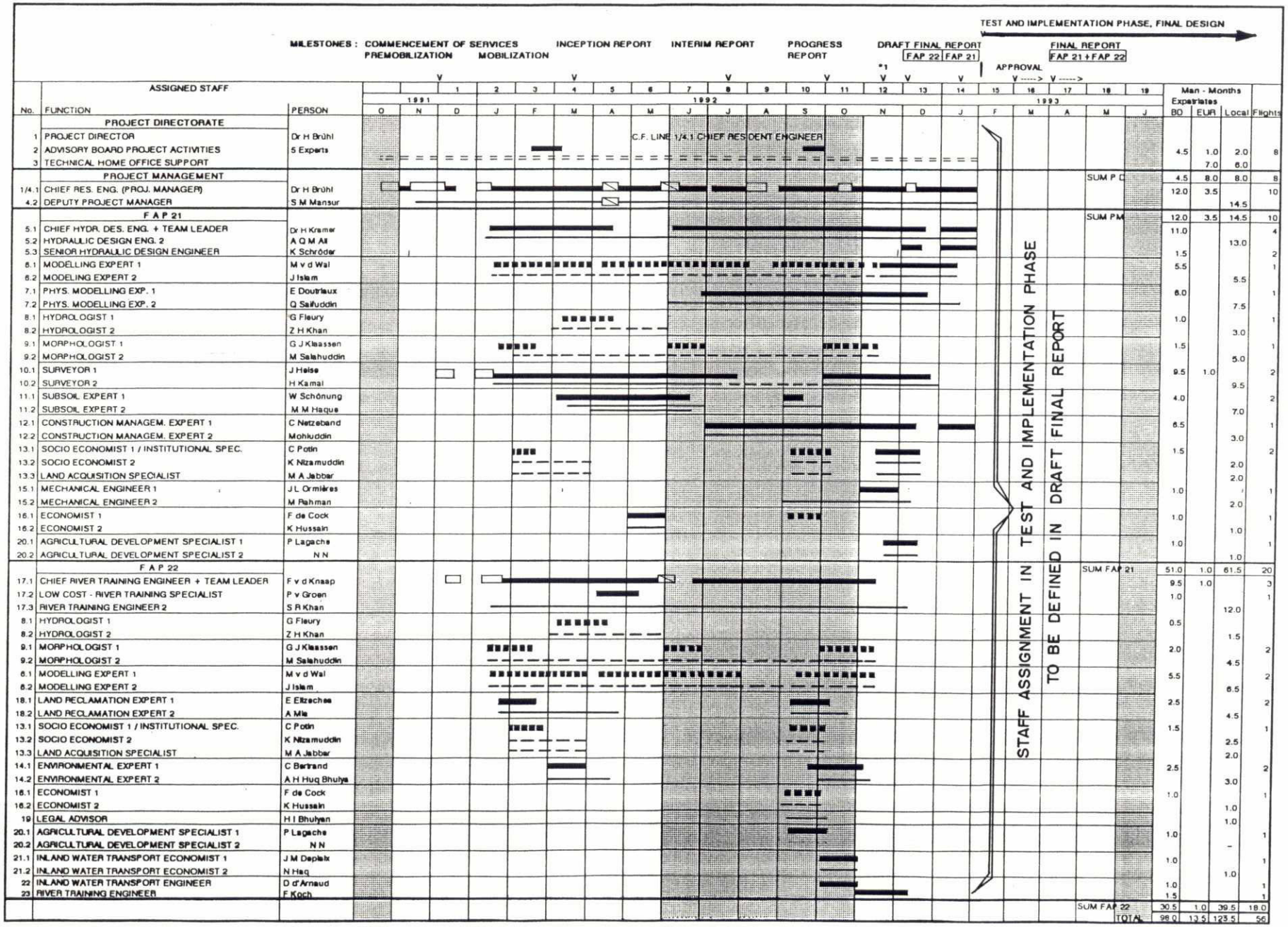
Observation : Decimal fractions of months are based on 30 days/month

* M Salahuddin was assigned to the Project from 02.02.92 to 31.05.92 i.e. for 3.93 months as trainee morphologist and not counted for billing purposes for that period

TABLE B.1 - 3

FAP 21/22 STAFFING SCHEDULE - PLANNING STUDY
REVISION NO 3, PROGRESS REPORT

30 SEPTEMBER 1992



No.	FUNCTION	PERSON	Man-Months Expatriates BO	EUR	Local	Flights
	PROJECT DIRECTORATE					
1	PROJECT DIRECTOR	Dr H Brühl				
2	ADVISORY BOARD PROJECT ACTIVITIES	5 Experts	4.5	1.0	2.0	8
3	TECHNICAL HOME OFFICE SUPPORT			7.0	6.0	
	PROJECT MANAGEMENT					
1/4.1	CHIEF RES. ENG. (PROJ. MANAGER)	Dr H Brühl	4.5	8.0	8.0	8
4.2	DEPUTY PROJECT MANAGER	S M Mansur	12.0	3.5		10
	F A P 21				14.5	
5.1	CHIEF HYDR. DES. ENG. + TEAM LEADER	Dr H Kramer	SUM PM 12.0	3.5	14.5	10
5.2	HYDRAULIC DESIGN ENG. 2	A Q M Ali	11.0			4
5.3	SENIOR HYDRAULIC DESIGN ENGINEER	K Schröder			13.0	
6.1	MODELLING EXPERT 1	M v d Wal	1.5			2
6.2	MODELING EXPERT 2	J Islam	5.5		5.5	1
7.1	PHYS. MODELLING EXP. 1	E Doutrieux				
7.2	PHYS. MODELLING EXP. 2	Q Saifuddin	6.0		7.5	1
8.1	HYDROLOGIST 1	G Fleury	1.0			1
8.2	HYDROLOGIST 2	Z H Khan			3.0	
9.1	MORPHOLOGIST 1	G J Klaassen	1.5			1
9.2	MORPHOLOGIST 2	M Salahuddin			5.0	
10.1	SURVEYOR 1	J Heise	9.5	1.0		2
10.2	SURVEYOR 2	H Kamal			9.5	
11.1	SUBSOIL EXPERT 1	W Schönung	4.0			2
11.2	SUBSOIL EXPERT 2	M M Haque			7.0	
12.1	CONSTRUCTION MANAGEM. EXPERT 1	C Netzeband	6.5			1
12.2	CONSTRUCTION MANAGEM. EXPERT 2	Mohiuddin			3.0	
13.1	SOCIO ECONOMIST 1 / INSTITUTIONAL SPEC.	C Potin	1.5			2
13.2	SOCIO ECONOMIST 2	K Nizamuddin			2.0	
13.3	LAND ACQUISITION SPECIALIST	M A Jabbar			2.0	
15.1	MECHANICAL ENGINEER 1	J L Ormières	1.0			1
15.2	MECHANICAL ENGINEER 2	M Rahman			2.0	
16.1	ECONOMIST 1	F de Cock	1.0			1
16.2	ECONOMIST 2	K Hussain			1.0	
20.1	AGRICULTURAL DEVELOPMENT SPECIALIST 1	P Lagache	1.0			1
20.2	AGRICULTURAL DEVELOPMENT SPECIALIST 2	N N			1.0	
	F A P 22		SUM FAP 21 51.0	1.0	61.5	20
17.1	CHIEF RIVER TRAINING ENGINEER + TEAM LEADER	F v d Knaap	9.5	1.0		3
17.2	LOW COST - RIVER TRAINING SPECIALIST	P v Groen	1.0			1
17.3	RIVER TRAINING ENGINEER 2	S R Khan			12.0	
8.1	HYDROLOGIST 1	G Fleury	0.5			
8.2	HYDROLOGIST 2	Z H Khan			1.5	
9.1	MORPHOLOGIST 1	G J Klaassen	2.0			2
9.2	MORPHOLOGIST 2	M Salahuddin			4.5	
6.1	MODELLING EXPERT 1	M v d Wal	5.5			2
6.2	MODELLING EXPERT 2	J Islam			6.5	
18.1	LAND RECLAMATION EXPERT 1	E Elzechea	2.5			2
18.2	LAND RECLAMATION EXPERT 2	A Mia			4.5	
13.1	SOCIO ECONOMIST 1 / INSTITUTIONAL SPEC.	C Potin	1.5			1
13.2	SOCIO ECONOMIST 2	K Nizamuddin			2.5	
13.3	LAND ACQUISITION SPECIALIST	M A Jabbar			2.0	
14.1	ENVIRONMENTAL EXPERT 1	C Bertrand	2.5			2
14.2	ENVIRONMENTAL EXPERT 2	A H Huq Bhuiya			3.0	
16.1	ECONOMIST 1	F de Cock	1.0			1
16.2	ECONOMIST 2	K Hussain			1.0	
19	LEGAL ADVISOR	H I Bhuiyan			1.0	
20.1	AGRICULTURAL DEVELOPMENT SPECIALIST 1	P Lagache	1.0		-	1
20.2	AGRICULTURAL DEVELOPMENT SPECIALIST 2	N N				
21.1	INLAND WATER TRANSPORT ECONOMIST 1	J M Deplaix	1.0			1
21.2	INLAND WATER TRANSPORT ECONOMIST 2	N Haq			1.0	
22	INLAND WATER TRANSPORT ENGINEER	D d'Arnaud	1.0			1
23	RIVER TRAINING ENGINEER	F Koch	1.5			1
			SUM FAP 22 30.5	1.0	39.5	18.0
			TOTAL 98.0	13.5	125.5	56

2 MODIFICATION OF SCOPE OF WORKS

Two modifications of the scope of works had been proposed in the Inception Report and in detail dealt with in the Administrative and Financial Report No.1, Section B-2. They had been approved by FPCO and the Funding Agencies and were included in the Interim Report as Fig. 6.1-1.

Additional investigations are to be done following the comments to the Interim Report and the resulting new Work Flow Chart is included as Table 3-1 in the preceding Progress Report.

3 REPORTING

The Consulting Agreement calls for regular reporting on technical matters of the Project as per Section K of the Agreement. In the Planning Study these reports are mainly the

- Inception Report
- Interim Report
- Progress Report
- Draft Final Report FAP 21
- Draft Final Report FAP 22
- Final Planning Study Report

As already said earlier no administrative and financial matters are included in the general reports due to the widespread circulation to many Government Agencies and the majority of the FAP projects i.e. far beyond the Client and the Funding Agencies.

The reports above will be amended by case to case reports as indicated in Section K-3 of the Consulting Agreement. Due to the modification of the project management through full time involvement of the Project Director the last report mentioned in that section - back to office reports by the Project Director - have become meaningless.

In the course of carrying out the study it turned out that separate information on special issues should be useful. Therefore the Consultant decided to issue Technical Reports, the first one having dealt with the Preselection of the Test Areas and issued on March 14, 1992, the second one being a report on the river training and morphological response, submitted as Annex 1 to the Interim Report.

So far the following reports have been submitted :

March	14, 1992	Technical Report No.1 (draft circulated 2.3.92)
March	20, 1992	Inception Report
April	28, 1992	Report on Study Tour in Europe.
May	21, 1992	Administrative and Financial Report No.1
July	15, 1992	Report on Braided Rivers Study Tour to China and USA
July	16, 1992	Interim Report

4 SUBCONTRACTS

4.1 GENERAL

The Consulting Agreement (Section 0) provides for five subcontracts to be executed under the Project, namely

1. Physical modelling
2. Subsoil investigations
3. Topographic and hydrographic surveys
4. Test rig for filter investigations
5. Optional investigations into different model bed materials.

4.2 SUBCONTRACTS CONCLUDED

To date the subcontracts numbers 1 to 3 have been concluded. The main data are as follows:

Item	Subject	Subcontractor	Contract Amount DM	Final Cost (estimated) DM
5.1	Physical modelling	River Research Institute	115,000*	(130,000)*
5.2	Subsoil investigations	Foundation Consultants	45,000	(40,000)
5.3	Topographic and hydrographic surveys	Hydroland The Surveyors and Realtors	78,500* 26,500*	(71,500)* (23,500)*
5.4	Filter test rig	Still in Negotiation		
7	Optional model tests	not to be carried out	0	0

* not including the subcontracts for the additional test sites, requested for in the comments to the Interim Report

Final invoices have not yet been extended for the subcontracts executed.

4.3 SUBCONTRACT IN NEGOTIATION

Item 5.4 : Filter Test Rig

Negotiations will BUET did not result in an agreement. Negotiations are now on the way with the River Research Institute, Faridpur.

C FINANCIAL ASPECTS

1 GENERAL

The Consulting Agreement provides for payment of the costs incurred to the Consultant by six fixed interim instalments and setting of the final costs and balancing of the Planning Study Phase with the invoice for the last instalment, after finalizing all the Services.

To enable the Client and Funding Agencies a financial follow up and control of the Project during its execution the Administrative and Financial Reports shall provide both an informative review of approximate costs accrued so far and a forecast on possible substantial changes of final costs, so far as anticipated at the date of reporting.

In Section C-2 two tables for the expected staffing costs are shown, in accordance to the Revision 3 of the Staffing Schedule as per Chapter B.

For easy reference the status of expenditures will be given in accordance to the tables of Annex 2 to the Consulting Agreement and exactly along the same items, showing the quantities and amounts of the Agreement and additionally the quantities and amounts accrued until the respective date (s). These tables are given in Section C-3.

Finally, in Section C-4 tentative forecasts on major modifications, as to be expected when preparing this report, are given in order to estimate the probable final contract sum and to indicate possible reserves and/or shortfalls.

2 EXPECTED STAFFING COSTS

In Chapter B the staffing schedule is shown on Table B.1-3. The resulting costs are compiled in Table C.2-1 and Table C.2-2 for expatriate and local professional staff, respectively.

Table C.2-1

EXPATRIATE PROFESSIONAL STAFF
- Planning Study Phase -

Revision No.3

No.	Function	Person	Comp.	Fees (DM)			Allowances (DM)			Total
				MM *	MM-Rate	Amount	MM *	MM-Rate	Amount	
1	Project Director/Project Manager	Dr H Brühl	RRI	15.50	29,500	457,250	12.00	3,500	42,000	499,250
2	Advisory Board	-	JV	5.50	31,000	170,500	4.50	3,500	15,750	186,250
3.1	Technical Home Office Support	Dr D Neuhaus	RRI	1.50	26,500	39,750				39,750
3.2	Technical Home Office Support	C Cottereau	CNR	2.00	26,500	53,000				53,000
3.3	Technical Home Office Support	M Borchert	L&P	1.00	26,500	26,500				26,500
3.4	Technical Home Office Support	F Koch	DELFT	2.50	26,500	66,250				66,250
4.1	Chief Resid. Eng. (Proj. Manager)									
5.1	Team Leader FAP 21	H Kramer	L&P	11.00	25,400	279,400	11.00	3,500	38,500	317,900
5.3	Senior Hydraulic Design Engineer	K Schröder	L&P	1.50	25,400	38,100	1.50	3,500	5,250	43,350
6.1	Modelling Expert 1	M v d Wal	DELFT	11.00	24,600	270,600	11.00	3,500	38,500	309,100
7.1	Physical Modelling Expert 1	E Doutriaux	CNR	6.00	20,200	121,200	6.00	3,500	21,000	142,200
8.1	Hydrologist 1	G Fleury	CNR	1.50	23,100	34,650	1.50	3,500	5,250	39,900
9.1	Morphologist 1	G J Klaassen	DELFT	3.50	28,900	101,150	3.50	3,500	12,250	113,400
10.1	Surveyor 1	J Heise	RRI	10.50	20,200	212,100	9.50	3,500	33,250	245,350
11.1	Subsoil Expert 1	W Schönung	L&P	4.00	20,200	80,800	4.00	3,500	14,000	94,800
12.1	Construction Management Expert 1	C Netzeband	RRI	6.50	25,400	165,100	6.50	3,500	22,750	187,850
13.1	Socio Economist 1	C Potin	CNR	3.00	25,400	76,200	3.00	3,500	10,500	86,700
14.1	Environmental Expert 1	C Bertrand	CNR	2.50	20,200	50,500	2.50	3,500	8,750	59,250
15.1	Mechanical Engineer 1	L Ormières	CNR	1.00	23,100	23,100	1.00	3,500	3,500	26,600
16.1	Economist 1	F de Cock	CNR	2.00	25,400	50,800	2.00	3,500	7,000	57,800
17.1	Team Leader FAP 22	F v d Knaap	DELFT	10.50	24,600	258,300	9.50	3,500	33,250	291,550
17.2	Low Cost River Training Specialist	P v Groen	DELFT	1.00	24,600	24,600	1.00	3,500	3,500	28,100
18.1	Land Reclamation Expert 1	E Elizechea	CNR	2.50	23,100	57,750	2.50	3,500	8,750	66,500
20.1	Agricultural Development Specialist	P Lagache	CNR	2.00	25,400	50,800	2.00	3,500	7,000	57,800
21.1	IWT Economist	J M Deplaix	CNR	1.00	25,400	25,400	1.00	3,500	3,500	28,900
22	IWT Engineer	D d'Arnaud	DELFT	1.00	24,600	24,600	1.00	3,500	3,500	28,100
23	River Training Engineer	F Koch	DELFT	1.50	26,500	39,750	1.50	3,500	5,250	45,000
TOTAL				**111.50**		**2,798,150**	**98.00**		**343,000**	**3,141,150**

*** MM taken from Table B.1-3**

Table C.2-2

LOCAL PROFESSIONAL STAFF
- Planning Study Phase -

Revision No.3

No.	Function	Person	Fees (DM) incl. Allowances		
			MM *	MM-Rate	Amount
2	Advisory Board	(BUET)	2.00	7,000	14,000
3	Technical Home Office Support	Dr S K Chowdhury / A S M Quasem	6.00	4,650	27,900
4.2	Dep. Proj. Manager	S M Mansur	14.50	4,800	69,600
5.2	Hydraulic Design Engineer - 2	A Q M Ali	13.00	3,800	49,400
6.2	Modelling Expert - 2	J Islam	12.00	4,000	48,000
7.2	Phys. Modelling Expert - 2	Q Saifuddin	7.50	4,000	30,000
8.2	Hydrologist - 2	Z H Khan	4.50	4,000	18,000
9.2	Morphologist - 2	M Salahuddin	9.50	4,300	40,850
10.2	Surveyor - 2	A Kamal	9.50	4,350	41,325
11.2	Subsoil Expert - 2	A Hasan / M Haque	7.00	4,000	28,000
12.2	Construction Management Expert - 2	Mohiuddin	3.00	4,200	12,600
13.2	Socio Economist - 2	K Nizamuddin	4.50	4,300	19,350
13.3	Land Acquis. Spec.	M A Jabbar	4.00	4,000	16,000
14.2	Environmental Expert - 2	A H Bhuiya	3.00	4,000	12,000
15.2	Mechanical Engineer - 2	M Rahman	2.00	4,000	8,000
16.2	Economist - 2	K Hussain	2.00	3,800	7,600
17.2	River Training Engineer	S R Khan	12.00	4,000	48,000
18.2	Land Reclamation Expert - 2	A Mia	4.50	4,000	18,000
19	Legal Advisor	H I Bhuiyan	1.00	4,200	4,200
20.2	Agricultural Development Spec. - 2	NN	1.00	4,000	4,000
21.2	IWT Economist-2	N Haq	1.00	4,200	4,200
TOTAL			**123.50**		**521,025**

*** MM taken from Table B.1-3**

3 STATUS OF EXPENDITURES

As already mentioned, the tables of this Section are giving an indicative information on the expenditures accrued. Generally the exact figures for reimbursable items are not yet known due to final invoices (e.g. of transport of customs clearance) or exchange rates still due. Hence the prices as estimated in the Consulting Agreement have been used for the calculation of expenditures accrued so far. In the following reports, with the real figures being available, these will gradually replace the estimated figures.

Table C.3-0

INDICATIVE COSTS ACCRUED UP TO 30.09.92

	SUMMARY	Per Agreement DM	up to 30.09.92 DM	Remarks
1	MANPOWER COSTS *	3,362,700	2,454,562	Bottom line of Table C.3-1
2	LUMPSUMS PER UNIT	1,013,880	723,934	Bottom line of Table C.3-2
3	REIMBURSABLES	778,600	584,379	Bottom line of Table C.3-3
4	LUMPSUMS	683,950	564,750	Bottom line of Table C.3-4
5	SUBCONTRACTS	340,000	200,000	Bottom line of Table C.3-5
6	CLIENT'S TRAINING / INFORMATION TOURS / CONFERENCES	177,550	83,255	Bottom line of Table C.3-6
	SUBTOTAL	6,356,680	4,610,880	
7	OPTIONAL SUBCONTRACT	300,000		
	PHYSICAL / FINANCIAL CONTINGENCIES	343,320		
	TOTAL PLANNING STUDY DM	**7,000,000**		

*** Man power cost according to Revision No.3 : DM 3,662,175**

Table C.3-1

INDICATIVE COSTS ACCRUED UP TO 30.09.92

ITEM	DESCRIPTION	Per Agreement/Rev.3 TOTAL DM	up to 30.09.92 DM
1.	MANPOWER COSTS * (Payment for actual assignment in the project)		
1.1	Expatriate Staff (c.f. Table C.3-7)		
1.1.1	Fees	2,798,150	1,880,937
1.1.2	Living Allowances	343,000	224,700
1.2	Local Staff (c.f. Table C.3-8)	521,025	348,925
	* OBSERVATIONS : - Vacation and sickness leave is included in the overhead costs of the man month rates - In item 1.1 2 x 2 days are allowed for travel time for each roundtrip EUR - DHAKA		
	SUBTOTAL ITEM 1	3,662,175	2,454,562

Table C.3-2a

INDICATIVE COSTS ACCRUED UP TO 30.09.92

ITEM	DESCRIPTION	UNIT	Per Agreement			up to 30.09.92		Remarks
			QUANTITY	UNIT RATE DM	TOTAL DM	QUANTITY	TOTAL DM	
2.	LUMPSUMS PER UNIT (Payment per unit performed)							
2.1	Office running costs incl. rental, electricity, water, communications, stationary and full support staff	month	15.0	17,464	261,960	11.0	192,104	incl. advance payment of rent for 6 months
2.2	Office long term stand-by costs incl. reduced electricity, water, communication no stationary, no support staff	month	0.0	4,500				
2.3	House running costs for long term exp. staff	month	54.0	3,000	162,000	30.0	90,000	incl. advance payment of rent
2.4	Hotel/Guesthouse for short term exp. staff	month	45.0	3,500	157,500	39.0	136,500	
2.5	Jeep running costs incl. microbus	veh-month	45.0	1,980	89,100	14.0	27,720	late delivery of vehicles
2.6	Sedan running costs	veh-month	48.0	1,540	73,920	14.0	21,560	late delivery of vehicles
2.7	Car rental costs	veh-month	33.0	3,000	99,000	39.0	117,000	late delivery of vehicles
2.8	Rental of electronic positioning system (Section L item 3.2.1)	month	6.0	8,000	48,000	6.0	48,000	
2.9	Reporting							
2.9.1	Inception Report	piece	15.0	100	1,500	53.0	5,300	
2.9.2	Interim Report	piece	15.0	250	3,750	53.0	13,250	
2.9.3	Progress Report	piece	15.0	100	1,500	8.0	800	
2.9.4	* Draft Final Report	piece	15.0	800	12,000			
2.9.5	* Final Report	piece	15.0	1,200	18,000			
	* OBSERVATIONS : In case of additional orders the unit rates for items 2.9.4 and 2.9.5 will be reduced to 90% of the original rate for the first ten additional copies and to 80% for the eleventh and following copies							
	TO BE CARRIED FOREWARD			DM	928,230		652,234	

Table C.3-2b

INDICATIVE COSTS ACCRUED UP TO 30.09.92

ITEM	DESCRIPTION	UNIT	Per Agreement			up to 30.09.92		Remarks
			QUANTITY	UNIT RATE DM	TOTAL DM	QUANTITY	TOTAL DM	
	CARRIED FORWARD				928,230		652,234	
2.10	Ground transport and miscellaneous costs for staff trips EUR - DHAKA	trip	53.0	300	15,900	27.0	8,100	
2.11	Excess luggage for econ./exc. class (18) and first 12 C-class staff trips EUR-DHAKA, except Advisory Board members	trip	30.0	750	22,500	27.0	20,250	
2.12	Daily allowance for Consultant's staff for investigations in USA and China	day	45.0	150	6,750	57.0	8,550	
2.13	Provisional sums for project related information tours abroad and conferences							
2.13.1	Daily allowances	day	30.0	150	4,500	32.0	4,800	
2.13.2	Man-week fees of home office staff in charge of the Client's staff in project related training / information tours / conferences at the Consultant's head quarters	week	6.0	6,000	36,000	5.0	30,000	
	SUBTOTAL ITEM 2			**DM**	**1,013,880**		**723,934**	

Table C.3-3a

INDICATIVE COSTS ACCRUED UP TO 30.09.92

ITEM	DESCRIPTION	UNIT	Per Agreement			up to 30.09.92		Remarks
			QUANTITY	UNIT RATE DM	TOTAL DM	QUANTITY	TOTAL DM	
3.	REIMBURSABLES (On actuals; payment on presented invoices paid)							
3.1	Purchase of Vehicles							
3.1.1	Jeep Nissan Patrol, Long wheel base (Section L item 2.1.1)	piece	1.0	45,500	45,500	0.835	38,000	
3.1.2	Jeep Nissan Patrol, Short wheel base (Section L item 2.1.2)	piece	3.0	37,500	112,500	2.4	90,000	
3.1.3	Sedan, Toyota Corona (Section L item 2.1.3)	piece	1.0	28,000	28,000			
3.1.4	Sedan, Toyota Corona (Section L item 2.1.4)	piece	2.0	22,500	45,000	2.4	54,000	
3.1.5	Microbus (Section L item 2.1.5)	piece	1.0	30,000	30,000	0.833	25,000	
3.1.6	Registration charge	veh.	7.0	2,400	16,800	1.0	2,400	
3.2	Purchase of Equipment							
3.2.1	PC 386 (Section L item 1.1.3)	piece	2.0	12,000	24,000	2.0	24,000	
3.2.2	Copier, large (Section L item 1.1.9)	piece	1.0	12,000	12,000	1.0	12,000	
3.2.3	Working boat (Section L item 3.1.1)	piece	1.0	20,000	20,000	1.0	20,000	
3.2.4	Echosounder (Section L item 3.1.2)	piece	1.0	12,000	12,000	1.0	12,000	
3.2.5	Current Meter (Section L item 3.1.3)	piece	1.0	45,000	45,000	1.0	45,000	
3.2.6	Digital Theodolite / EDM (Section L item 3.1.7)	piece	1.0	40,000	40,000	1.0	40,000	
3.3	Air Travel EUR-DHAKA							
3.3.1	Staff, C-class *	trip	34.0	5,300	180,200	20.0	106,000	
3.3.2	Staff and dependants, econ./exc. fare	trip	34.0	2,200	74,800	15.0	33,000	
3.4	Air freight for equipment	kg	1000.0	12	12,000		24,500	better unit rate (7 DM) but more weight (about 3,500 kg)
	OBSERVATIONS : Information in brackets refers to Scope of Works, Section L item 3.3.1 : * C-class flights as a rule for Advisory Board members, Project Director, Team Leaders, first trips of senior staff; subject to modifications.							
	TO BE CARRIED FOREWARD			**DM**	**697,800**		**525,900**	

Table C.3-3b

INDICATIVE COSTS ACCRUED UP TO 30.09.92

ITEM	DESCRIPTION	UNIT	Per Agreement			up to 30.09.92		Remarks
			QUANTITY	UNIT RATE DM	TOTAL DM	QUANTITY	TOTAL DM	
	CARRIED FORWARD				**697,800**		**525,900**	
3.5	Consultant's cost for investigations in USA and China							
3.5.1	Air travel, C-class	trip	3.0	7,400	22,200	(6200)	18,600	
3.5.2	Hotel accomodation	night	42.0	200	8,400		4,268	
3.5.3	Miscellaneous expenses: ground travel, guidance fees etc.	to be detailed	1.0	20,000	20,000	1.0	20,000	
3.6	Provisional sums for Consultant's costs for project related information tours abroad and conferences							
3.6.1	Air-travel, C-class	trip	4.0	5,300	21,200	2.0	10,600	Study Tour Europe 04.04.92 to 19.04.92
3.6.2	Hotel accomodation	night	25.0	200	5,000		2,911	
3.6.3	Miscellaneous expenses : ground travel, conference fees	to be detailed	1.0	4,000	4,000	0.525	2,100	
	SUBTOTAL ITEM 3			**DM**	**778,600**		**584,379**	

Table C.3-4

INDICATIVE COSTS ACCRUED UP TO 30.09.92

ITEM	DESCRIPTION	UNIT	Per Agreement			up to 30.09.92		Remarks
			QUANTITY	UNIT RATE DM	TOTAL DM	QUANTITY	TOTAL DM	
4.	LUMPSUMS FOR SPECIAL ITEMS AND TASKS							
4.1	Office installation incl. national and international phonelines and equipment as per (Section L items 1.1.1, 1.1.2, 1.1.4-1.1.8, 1.10-1.14)	l.s.	1.0	98,650	98,650	100%	98,650	
4.2	Installation of houses incl. furniture, local phone	l.s./ per house	4.0	24,700	98,800	3	74,100	
4.3	Miscellaneous equipment (Section L items 3.1.4, 3.1.5, 3.1.6., 3.1.8, 3.1.9)	l.s.	1.0	21,500	21,500	100%	21,500	
4.4	Remote sensing study (details c.f. table A-3)	l.s.	1.0	225,000	225,000	80%	180,000	
4.5	2-D mathematical flow model (details c.f. table A-4)	l.s.	1.0	165,000	165,000	70%	115,500	
4.6	Scour investigation study (details c.f. table A-5)	l.s.	1.0	75,000	75,000	100%	75,000	
	OBSERVATION : Information in brackets refers to Scope of Works, Section L							
	SUBTOTAL ITEM 4			**DM**	**683,950**		**564,750**	

Table C.3-5

INDICATIVE COSTS ACCRUED UP TO 30.09.92

ITEM	DESCRIPTION	UNIT	Per Agreement			up to 30.09.92		Remarks
			QUANTITY	UNIT RATE DM	TOTAL DM	QUANTITY	TOTAL DM	
5.	SUBCONTRACTS (On actuals, payment on presented invoices of subcontractors, but not exceeding the amounts as indicated)							
5.1	Physical modelling of 3 test sites according to the ToR as per Scope of Works, Section 0-1	piece	1.0	130,000	130,000	50%	65,000	without additional test sites
5.2	Subsoil investigations according to the ToR as per Scope of Works, Section 0-2	piece	1.0	55,000	55,000	1.0	40,000	
5.3	Topographic and hydrometric surveys acc. to the ToR as per Scope of Works, Section 0-3	piece	1.0	80,000	80,000	1.0	95,000	without additional test sites
5.4	Test rig for filter investigations according to the ToR as per Scope of Works, Section 0-4 (see also Table A-6)	piece	1.0	75,000	75,000			
	SUBTOTAL ITEM 5				**DM** **340,000**		**200,000**	

Table C.3-6

INDICATIVE COSTS ACCRUED UP TO 30.09.92

ITEM	DESCRIPTION	UNIT	Per Agreement			up to 30.09.92		Remarks
			QUANTITY	UNIT RATE DM	TOTAL DM	QUANTITY	TOTAL DM	
6.	CLIENT'S TRAINING / INFORMATION TOURS / CONFERENCES (Provisional sums for Client's costs for project related training, information tours abroad and conferences)							
6.1	Investigations in USA and China							
6.1.1	Air travel; C-class (reimb.)	trip	4.0	7,400	29,600	(6200)	24,800	
6.1.2	Hotel accomodation (reimb.)	night	56.0	200	11,200		5,833	
6.1.3	Daily allowance	day	60.0	150	9,000	76	11,400	
6.2	Other information tours abroad and conferences							
6.2.1	Air travel to Europe and other places; C-class (reimb.)	trip	10.0	5,300	53,000	4.0	21,200	
6.2.2	Allowance and accomodation for events at the Consultant's home office headquarters (weekly L.S.)	week	10.0	2,500	25,000			
6.2.3	Allowance at other places (daily L.S.)	day	45.0	150	6,750	64.0	9,600	
6.2.4	Hotel accomodation acc. to item 6.2.3 (reimb.)	night	40.0	200	8,000		5,822	
6.2.5	Miscellaneous costs : conference fees, ground travel etc. (reimb.)	to be detailed	1.0	5,000	5,000		4,600	
6.3	Special training abroad	to be detailed	1.0	30,000	30,000			
	SUBTOTAL ITEM 6			**DM**	**177,550**		**83,255**	

Table C.3-7

INDICATIVE COSTS FOR EXPATRIATE PROFESSIONAL STAFF ACCRUED UP TO 30.09.92

No.	Function	Person	Agreement/Revision No.3							up to 30.09.92				Remarks
			Fees (DM)			Allowances (DM)			Total	Fees (DM)		Allowances (DM)		
			MM	MM-Rate	Amount	MM	MM-Rate	Amount		MM *	Amount	MM *	Amount	
1	Project Director	Dr H Brühl	15.50	29,500	457,250	12.00	3,500	42,000	499,250	11.30	333,350	8.80	30,800	
2	Advisory Board		5.50	31,000	170,500	4.50	3,500	15,750	186,250	5.17	160,270	4.17	14,595	
3.1	Technical Home Office Support	Dr D Neuhaus	1.50	26,500	39,750				39,750					
3.2	Technical Home Office Support	C Cottereau	2.00	26,500	53,000				53,000	5.00	132,500			
3.3	Technical Home Office Support	M Borchert	1.00	26,500	26,500				26,500					
3.4	Technical Home Office Support	F Koch	2.50	26,500	66,250				66,250					
4.1	Chief Resid. Eng. (Proj. Manager)													
5.1	Team Leader FAP 21	H Kamar	11.00	25,400	279,400	11.00	3,500	38,500	317,900	7.13	181,102	7.13	24,955	
5.3	Senior Hydraulic Design Engineer	K Schröder	1.50	25,400	38,100	1.50	3,500	5,250	43,350					
6.1	Modelling Expert 1	M v d Wal	11.00	24,600	270,600	11.00	3,500	38,500	309,100	7.84	192,864	7.84	27,440	
7.1	Physical Modelling Expert 1	E Doutriaux	6.00	20,200	121,200	6.00	3,500	21,000	142,200	3.10	62,620	3.10	10,850	
8.1	Hydrologist 1	G Fleury	1.50	23,100	34,650	1.50	3,500	5,250	39,900	1.50	34,650	1.50	5,250	
9.1	Morphologist 1	G J Klaassen	3.50	28,900	101,150	3.50	3,500	12,250	113,400	2.37	68,493	2.37	8,295	
10.1	Surveyor 1	J Heise	10.50	20,200	212,100	9.50	3,500	33,250	245,350	7.67	154,934	6.67	23,345	
11.1	Subsoil Expert 1	W Schönung	4.00	20,200	80,800	4.00	3,500	14,000	94,800	4.07	82,214	4.07	14,245	
12.1	Construction Management Expert 1	C Netzeband	6.50	25,400	165,100	6.50	3,500	22,750	187,850	2.97	75,438	2.97	10,395	
13.1	Socio Economist 1	C Potin	3.00	25,400	76,200	3.00	3,500	10,500	86,700	1.67	42,418	1.67	5,845	
14.1	Environmental Expert 1	C Bertrand	2.50	20,200	50,500	2.50	3,500	8,750	59,250	1.27	25,654	1.27	4,445	
15.1	Mechanical Engineer 1	L Ormières	1.00	23,100	23,100	1.00	3,500	3,500	26,600					
16.1	Economist 1	F de Cock	2.00	25,400	50,800	2.00	3,500	7,000	57,800	1.10	27,940	1.10	3,850	
17.1	Team Leader FAP 22	F v d Knaap	10.50	24,600	258,300	9.50	3,500	33,250	291,550	9.03	222,138	8.03	28,105	
17.2	Low Cost River Training Specialist	P v Groen	1.00	24,600	24,600	1.00	3,500	3,500	28,100	1.00	24,600	1.00	3,500	
18.1	Land Reclamation Expert 1	E Elizechea	2.50	23,100	57,750	2.50	3,500	8,750	66,500	1.74	40,194	1.74	6,090	
20.1	Agric. Div. Specialist	P Lagache	2.00	25,400	50,800	2.00	3,500	7,000	57,800	0.77	19,558	0.77	2,695	
22	IWT Economist	J M Deplaix	1.00	25,400	25,400	1.00	3,500	3,500	28,900					
22	IWT Engineer	D d'Arnaud	1.00	24,600	24,600	1.00	3,500	3,500	28,100					
23	River Training Engineer	F Koch	1.50	26,500	39,750	1.50	3,500	5,250	45,000					
TOTAL			**111.50**		**2,798,150**	**98.00**		**343,000**	**3,141,150**	**74.70**	**1,880,937**	**64.20**	**224,700**	

*** MM taken from Table B.1-1**

Table C.3-8

INDICATIVE COSTS FOR LOCAL PROFESSIONAL STAFF UP TO 30.09.92

No.	Function	Person	Agreemeent/Revision No.3 Fees (DM) incl. Allowances			up to 30.09.92 Fees (DM) incl. Allowances	
			MM *	MM-Rate	Amount	MM *	Amount
2	Advisory Board	(BUET)	2.00	7,000	14,000		
3	Technical Home Office Support	Dr S K Chowdhury / A S M Quasem	6.00	4,650	27,900	5.00	23,250
4.2	Deputy Project Manager	S M Mansur	14.50	4,800	69,600	10.53	50,544
5.2	Hydraulic Design Engineer - 2	A Q M Ali	13.00	3,800	49,400	8.80	33,440
6.2	Modelling Expert - 2	J Islam	12.00	4,000	48,000	8.00	32,000
7.2	Phys. Modelling Expert - 2	Q Saifuddin	7.50	4,000	30,000	4.00	16,000
8.2	Hydrologist - 2	Z H Khan	4.50	4,000	18,000	3.00	12,000
9.2	Morphologist - 2	Q Saifuddin/M Salahuddin	9.50	4,300	40,850	8.00	34,400
10.2	Surveyor - 2	A Kamal	9.50	4,350	41,325	6.30	27,405
11.2	Subsoil Expert - 2/3	Mazharul Haque/Ayub Hasan	7.00	4,000	28,000	7.17	28,680
12.2	Construction Management Expert - 2	Mohiuddin	3.00	4,200	12,600	2.83	11,886
13.2	Socio Economist - 2	K Nizamuddin	4.50	4,300	19,350	2.60	11,180
13.3	Land Acquis. Spec.	M A Jabbar	4.00	4,000	16,000	2.53	10,120
14.2	Environmental Expert - 2	A Huq Bhuiya	3.00	4,000	12,000	0.83	3,320
15.2	Mechanical Engineer - 2	M Rahman	2.00	4,000	8,000		
16.2	Economist - 2	M L Rahman	2.00	3,800	7,600	1.00	3,800
17.2	River Training Engineer	S R Khan	12.00	4,000	48,000	8.57	34,280
18.2	Land Reclamation Expert - 2	A Mia	4.50	4,000	18,000	3.63	14,520
19	Legal Advisor	H I Bhuiyan	1.00	4,200	4,200	0.50	2,100
20.2	Agricultural Dev. Specialist-2	NN	1.00	4,000	4,000		
21.2	IWT Economist-2	N Haq	1.00	4,200	4,200		
TOTAL			**123.50**		**521,025**	**83.29**	**348,925**

*** MM taken from Table B.1-2**

4 FINANCIAL FORECAST

The financial forecast refers to the final contract amount and will be calculated according to the items which at the present state of knowledge are expected to substantially differ from the estimated values in the Consulting Agreement, including the additional Task 34A (Navigation Study) and the pre-investigation of two additional test sites. Items which at present seem to result approximately in the estimated figures or items where no judgement can be made so far are not included in the table.

Item	Description	Reason for Difference to Agreement	Estimated Amount (DM)
1.1	Staff	Change of Schedule from Agreement to Revision-2 Change of Schedule from Revision-2 to Revision-3	+ 126,225 + 173,250
2.3/ 2.4	Accomm.	Rearrangement House/Hotel, additional staff, but see also 4.2	+ 18,000
2.5	Jeep running costs	Late delivery of Project vehicles saving of abt 10 veh. months	- 19,800
2.6	Sedan running costs	Dito abt 6 veh. months	- 9,240
2.7	Car rental costs	Dito abt 16 veh. months reason: delivery time two months more than at time of proposal	+ 48,000
2.9	Reporting	Client needs substantially more reports than included in the Agreement	+ 30,000
2.14 (new)	Video, 1 hr., commented	Equiv. to item B.2.9.7 of Consulting Agreement. It was felt necessary to include that item also in the Planning Study, c.f. Inception Report p.3-32.	+ 10,000
3.1	Purchase of vehicles	Better prices than estimated for proposal	- 40,000
3.3	Air travel EUR-DAC	Staffing Schedule Agreement/Revision 2	+ 10,000
3.4	Air freight	More chargeable weight due to bulkiness of cargo, but much better rates	+ 12,500
3.5/ 3.6	Consultant's study tours	Fewer trips, better rates	- 15,000
4.2	House installation	Rearrangement Houses/Hotel	- 24,700
4.4	Remote sensing study	Additional test sites	+ 30,000
4.5	2-D Mathematical model	Additional test sites	+ 30,000
5.1	Physical model tests	Additional test sites	+ 25,000
5.2	Subsoil investigations	Lower price due to stiff competition	- 15,000
5.3	Topographic/Hydrographic survey	- Additional (fourth) test site required second subcontract. Hence double mobilization cost, higher unit price - Checks of additional areas (Kazipur & Sariakandi)	+ 15,000 + 25,000
		Balance	+ 429,235

According to the present forecast the cost for the Planning Study would amount to:

Item 1 to 6	approx.	DM	6,780,000
Item 7		DM	0
Contingencies	approx.	DM	220,000
Contract Sum		DM	7,000,000