

PD-ABJ-997

EASTERN WATERS INITIATIVE

Preliminary Program Description

1990 - 1992



IRRIGATION SUPPORT PROJECT FOR ASIA AND THE NEAR EAST

EASTERN WATERS INITIATIVE

EWI Program Management and Supervision of Country Programs and TSC Support

BACKGROUND

The Eastern Waters Initiative (EWI), funded by the ANE Bureau and USAID/Dhaka was developed to address the problems of flooding in Bangladesh in the regional context of the Ganges and Brahmaputra River Basins. It is designed to follow-up selected Eastern Waters Study (EWS) recommendations, and provides a vehicle for U.S. support for the emerging international action program outlined in the World Bank's Flood Action Plan (FAP). The EWS presented a broad analysis of conditions and opportunities for short-term and long-term development interventions in the region, as well as an agenda of studies that should be done to provide necessary data for decision makers.

The broad objectives of the EWI program are to:

- provide a team to conceptualize, plan, implement and manage the EWI program;
- develop the EWI program cooperatively with the regional governments' own activities in the Ganges and Brahmaputra River Basins;
- provide a mechanism for the Bureau to implement its policy initiatives for water and agricultural development in the region.
- ensure continued communication and cooperation with the World Bank, and other multi-lateral and bi-lateral donors working in the EWI region;

Basic elements of the preliminary EWI program were formulated in consultation with USAID Missions in Dhaka, New Delhi and Kathmandu. Initial EWI funding of \$4 million included \$300,000 for the Eastern Waters Study, and \$3,700,000 for the preliminary EWI program. The indicative preliminary program included specific country programs in Bangladesh, India, and Nepal; a regional component focused on research coordination and collaboration through a series of international meetings and workshops; and a management and administrative component.

In the initial phase of the indicative EWI program ISPAN have worked extensively with the Bureau and the Missions to refine and develop a detailed program. As noted in the specific discussions below the preliminary program, particularly the Bangladesh and regional components have been expanded resulting a revised program costing \$7.4 million for the period January 1990-April 1992.

EWI PROGRAM

The revised EWI Program is outlined in Table 1. The organization of the EWI Program Management and Supervision of Country Programs is summarized in Figure 1. Budgets for each activity are summarized by funding source in Table 2. The program includes country programs planned in three countries in the region: Bangladesh (\$5.21 million), India (\$0.358 million) and Nepal (\$0.098 million). In addition there is a regional program of activities (\$0.63 million), and provision overall program management and administrative support (\$1.18 million).

Table 1.

**EASTERN WATERS INITIATIVE
PROGRAM ELEMENTS**

| | <u>Activity No</u> |
|--|--------------------|
| PROGRAM MANAGEMENT AND SUPPORT | |
| EWI Program Management | 670b-1 |
| EWI TSC Support Services | 670b-2 |
| REGIONAL | |
| EWI Advisory Group | 670b-3 |
| EWI International Meetings | 670b-4 |
| EWI Organizing International Conferences and Seminars | 670b-5 |
| BANGLADESH | |
| A. FLOOD ACTION PLAN (FAP) | |
| Management and Coordination | 670b-6 |
| Flood Response - Phase I | 670b-7(a) |
| Flood Response - Phase II | 670b-7(b) |
| Environment - Phase I | 670b-8(a) |
| Environment - Phase II | 670b-8(b) |
| G.I.S. - Phase I | 670b-9(a) |
| G.I.S. - Phase II | 670b-9(b) |
| Flood Proofing | 670b-10 |
| FAP Panel of Experts | 670b-11 |
| B. AGRICULTURAL SECTOR POLICY | |
| Support to the Ministry of Agriculture | 670b-12 |
| INDIA | |
| Flood Forecasting, Prepared- ness and Proofing | 670b-13 |
| NEPAL | |
| Policy Dialogue/Basin Research | 670b-14 |

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Figure 1.

EASTERN WATERS INITIATIVE PROGRAM MANAGEMENT AND ORGANIZATION

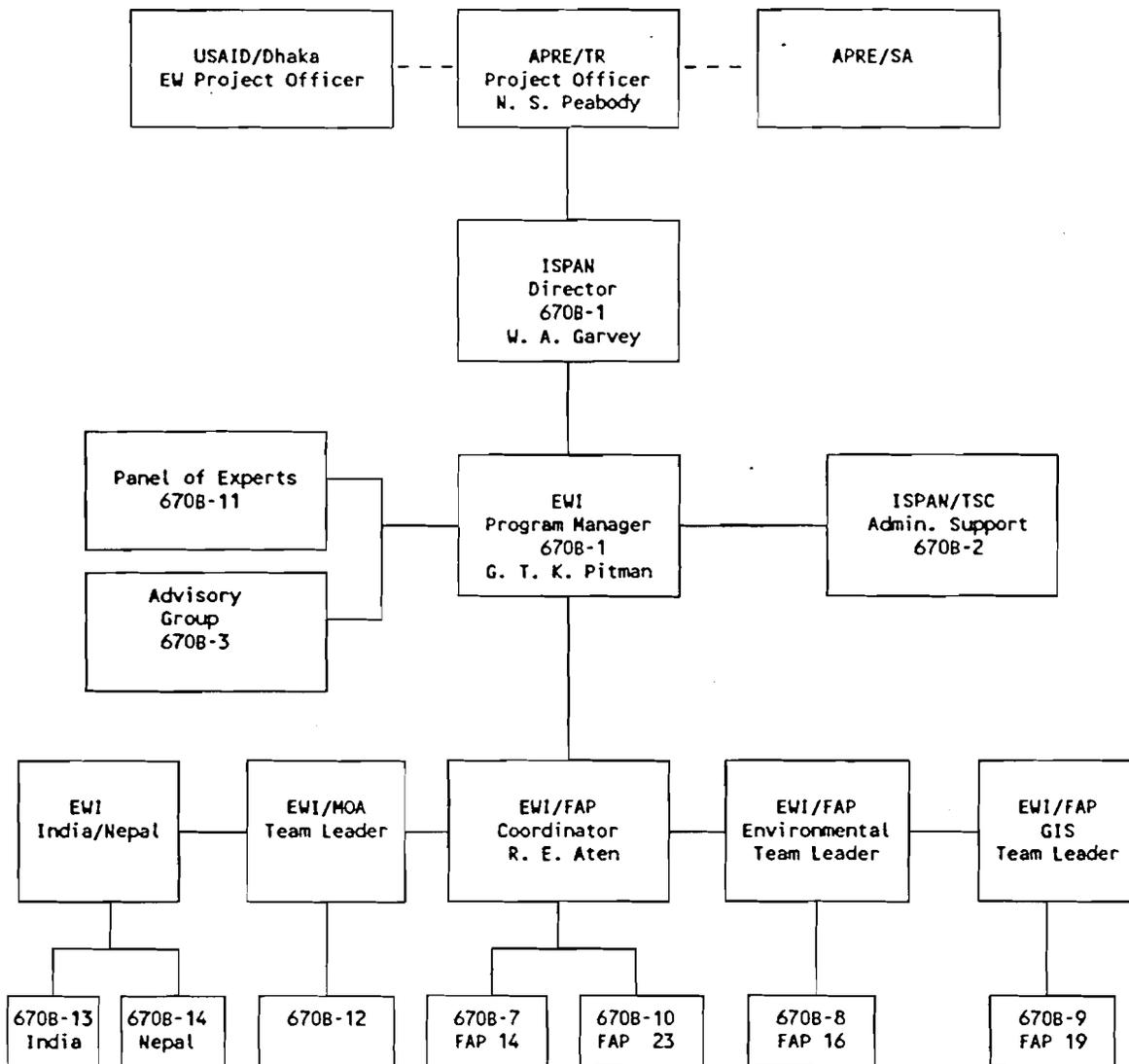


Table 2.

**EASTERN WATERS INITIATIVE
PROGRAM BUDGET**

| EWI ACTIVITY DESCRIPTION | EWI Activity Number | SOURCE OF FUNDS * | | | | | TOTAL EWI PROGRAM BUDGET |
|--|---------------------------|-------------------|------------------|-------------------|------------------|-----------------|-----------------------------------|
| | | EWI I BUDGET | EWI II BUDGET | EWI III BUDGET | EWI IV BUDGET | EWI V BUDGET | |
| ISPAN | | | | | | | |
| EWI Program Management | 670b-1 | \$592,279 | | \$11,420 | \$45,809 | | \$649,509 |
| EWI TSC Support Services | 670b-2 | \$236,767 | \$134,984 | \$32,066 | \$128,622 | | \$532,439 |
| | subtotal | \$829,047 | \$134,984 | \$43,486 | \$174,431 | | \$1,181,948 |
| ANE REGIONAL | | | | | | | |
| EWI Advisory Group | 670b-3 | | | \$225,625 | | | \$225,625 |
| EWI International Meetings | 670b-4 | \$88,465 | | | | | \$88,465 |
| EWI Organizing International Conferences and Seminars | 670b-5 | | | | | \$315,991 | \$315,991 |
| | subtotal | \$88,465 | | \$225,625 | | \$315,991 | \$630,081 |
| BANGLADESH | | | | | | | |
| A. FLOOD ACTION PLAN (FAP) | | | | | | | |
| Management and Coordination | 670b-6 | \$993,304 | | | | | \$993,304 |
| Flood Response - Phase I | 670b-7(a) | \$219,697 | | | | | \$219,697 |
| Flood Response - Phase II | 670b-7(b) | | \$372,515 | | | | \$372,515 |
| Environment - Phase I | 670b-8(a) | \$194,977 | | | | | \$194,977 |
| Environment - Phase II | 670b-8(b) | | \$767,501 | | | | \$767,501 |
| G.I.S. - Phase I | 670b-9(a) | \$712,775 | | | | | \$712,775 |
| G.I.S. - Phase II | 670b-9(b) | | | | \$631,297 | | \$631,297 |
| Flood Proofing | 670b-10 | \$206,224 | | | | | \$206,224 |
| Panel of Experts | 670b-11 | | | \$203,319 | | | \$203,319 |
| B. AGRICULTURAL SECTOR POLICY | | | | | | | |
| Support to the Ministry of Agriculture | 670b-12 | | | | \$907,138 | | \$907,138 |
| | subtotal | \$2,326,977 | \$1,140,016 | \$203,319 | \$1,538,435 | | \$5,208,747 |
| INDIA | | | | | | | |
| Flood Forecasting, Prepared- ness and Proofing | 670b-13 | \$357,713 | | | | | \$357,713 |
| NEPAL | | | | | | | |
| Policy Dialogue/Basin Research | 670b-14 | \$97,710 | | | | | \$97,710 |
| | TOTAL | \$3,699,912 | \$1,275,000 | \$472,430 | \$1,712,866 | \$315,991 | \$7,476,199 |

NOTE.

* The funding of EWI has been split into five categories which show the status of funding 8/21/90 as shown:

EWI I : \$ 3.700 million, obligated.

EWI II : \$ 1.275 million, pending approval of Contracting Officer.

EWI III: \$ 0.472 million, Bureau approval sought.

EWI IV : \$ 1.713 million, awaiting Mission buy-in to ISPAN/EWI

EWI V : \$ 0.316 million, not yet approved by Bureau.

Total \$ 7.476 million

06-Sept-90

Bangladesh

The initial EWI program was presented with the understanding that specific activities would be identified during early implementation and presented to the Eastern Waters Technical Task Force for approval. Final details were developed after the international meeting in London in December, 1989 to discuss and endorse the *Action Plan for Flood Control in Bangladesh (FAP)*, a twenty-six component short-term action and study program prepared by the World Bank after the G-7 meetings in Paris. Ambassador Willard DuPree led the U.S. delegation, which had reviewed drafts of the *Action Plan* and prepared a strategy for U.S. support. The World Bank agreed to coordinate the implementation of the *Action Plan*, its components and studies, with U.N.D.P. funding, and the Government of Bangladesh (GBD) established an elaborate organizational arrangement to facilitate the process through the Flood Plan Coordination Organization (FPCO). The U.S. agreed to take the lead in four supporting activities:

- FAP 14. Socio-Economics Study--Flood Response (670b-7)
- FAP 16. Environment Study (670b-8)
- FAP 19. Geographic Information System (GIS) (670b-9)
- FAP 23. Flood Proofing Pilot Project (670b-10)

The Flood Response and Environment Studies were identified as high priority studies to be launched quickly to establish guidelines and patterns for regional studies to follow, and the U.S. committed itself to do so, using ISPAN as a mechanism for rapid mobilization. The Flood Response and Environmental studies will be important synthesizing activities, with concomitant high visibility.

The meeting adjourned with plans for donors and government officials to meet in Dhaka in January, 1990, to draft preliminary scopes of work for the components and studies. The Dhaka meetings had three primary results for the U.S.:

- (A) ISPAN/EWI was committed to lead the four studies which are consistent with the intent of EWI and clearly draw on comparative strengths of the U.S.
- (B) EWI resources will leverage additional funding. EWI will design the FAP Flood Proofing Pilot Project, at an estimated cost of \$206,000 and Sweden and Australia will fund the pilot itself (\$6.8 million).
- (C) EWI will also leverage an estimated \$1,538,000 in Mission funds to strengthen the FAP GIS component, building on previous Mission investments, and to support the Planning Cell of the Ministry of Agriculture, particularly in groundwater development, privatization and marketing. The latter will establish USAID presence at the agricultural policy table, which is expected to strengthen and promote new private sector initiative. Both of these inputs are consistent with the EWS. The Ministry of Agriculture input is designed to complement our investments in the *Action Plan*, thus the Mission has requested A.I.D./Washington to manage this activity as part of the EWI program.

In addition to the four FAP supporting activities, and the support to the Planning Cell of the Ministry of Agriculture, the U.S. will make contributions to the *Action Plan's* Expert Panel, consisting of the ISPAN Project Director, a fisheries specialist, and other experts, as appropriate. This complements similar French and British support for the Panel, enlarging it beyond U.N.D.P. funding levels.

The EWI program has very high visibility, will enable us to keep commitments made at an international forum, will draw on and highlight U.S. technology, and will leverage approximately \$1.5 million from USAID/Dhaka and \$6.8 million from other donors. Ultimately, this investment will provide critical data for investment and design decisions, maintain a place for the U.S. at the flood control policy table and significantly advance environmental policy and management in Bangladesh.

India

The Government of India has informally expressed strong support for the basic conclusions of EWS and has recommended that EWI provide assistance in flood forecasting, flood preparedness and flood proofing, which are seen as important, non-sensitive and complementary to our efforts in Bangladesh. A program of exchange and support will be developed over the next few months (\$358,000).

Nepal

Based on USAID/Kathmandu input, the original EWI proposal allocated almost \$400,000 for studies to be conducted by the Integrated Center for Integrated Mountain Development (ICIMOD), and ICIMOD was invited to submit preliminary proposals. However, subsequent discussions with His Majesty's Government called into question the participation of ICIMOD, except on a regional basis; thus no further action was taken. Currently, it is unlikely that EWI will fund studies in Nepal, although some funds (\$98,000) are set aside to enable EWI to invite Nepalese to attend international meetings.

Regional Activities

In addition to the country programs in Bangladesh, India and Nepal, the revised EWI program contains four regional activities:

- EWI Advisory Group, to establish an ongoing role for the EWS study team, slightly expanded, to follow the implementation of the FAP and prepare an EWS supplement which assesses subsequent activities in the basins and synthesize the outputs of the EWI under the Bangladesh FAP (\$226,000).
- ISPAN Technical Support Center (TSC) administrative support, a share of the TSC's operational costs which previously were assumed to be covered by ANE Bureau core funding (\$532,000).
- Participation in international meetings (\$88,000).
- Organizing international conferences and seminars (\$316,000).

The three country programs and four regional activities will be managed, supervised and supported from the ISPAN/TSC, Washington.

The activities under (670B-1), Program Management and Supervision of Country Programs, will be supplemented by the activity TSC Support (670B-2). The objective of Activity 670B-2 is to provide technical and logistical support to EWI Program management (accommodation, communication, travel, financial services, publications, management of TDY, etc.).

SCHEDULE

This activity has 5 phases and 23 tasks:

| Phase I (6 months: December 1989 - May 1990) | | <u>Schedule</u> |
|--|--|-----------------|
| Task 1. | In consultation with the Bureau prepare for and attend the international conference to discuss the Bangladesh Flood Action Plan cleared by the World Bank in London. | 12/89 |
| Task 2. | Recruitment FAP Resident Manager and Coordinator for Bangladesh. | 01/90 |
| Task 3. | Initiate the preparation of detailed Terms of Reference (TOR) for EWI activities in Bangladesh, India and Nepal and attend the FAP January meeting in Dhaka, Bangladesh. | 01/90-03/90 |

| | | |
|---|--|-----------------|
| Task 4. | Circulate the draft Bangladesh TORs to the ISPAN/TSC consortium members and initiate recruiting of U.S. consultants for EWI. | 03/90 |
| Task 5. | Finalize the FAP TOR in consultation with the Bureau, ISPAN/TSC, Panel of Experts (POE) and FPCO, attend Cambridge (UK) POE meeting in April/May. | 04/90-05/90 |
| Phase II (4 months: June 1990 - September 1990) | | |
| Task 6. | Attend POE meeting in Dhaka to have the FAP TOR approved by FPCO and GBD; liaise and cooperate with other FAP donors. | 06/90 |
| Task 7. | Finalize Technical Assistance Project Performance (TAPP): Support for Agricultural Resource Policy, Planning and Management (SARPPAM). Report on Bangladesh TORs and TAPP. | 06/90-07/90 |
| Task 8. | Prepare detailed work plan (1990-1992) and budget for the EWI Program (including draft program of workshops, conferences and seminars) and present to Bureau. | 07/90-08/90 |
| Task 9. | Finalize selection and recruitment of EWI consultants for the FAP. | 08/90-09/90 |
| Phase III (4 months: October 1990 - January 1991) | | |
| | | <u>Schedule</u> |
| Task 10. | Initiate EWI/FAP field work in Bangladesh; conduct Team Planning meetings (TPMs) in Washington, D.C. and Dhaka. | 10/90-11/90 |
| Task 11. | Mobilize EWI Regional Manager to Bangladesh. | 11/90 |
| Task 12. | Follow-up EWI in India and Nepal, finalize EWI work programs in these countries. | 11/90-12/90 |
| Task 13. | Review draft FAP Inception Reports, mobilize Advisory Team, finalize Inception Reports. | 11/90-01/91 |
| Task 14. | Prepare EWI First Annual Report. | 11/90-12/90 |
| Task 15. | Finalize EWI Annual Work Plan for 1991/1992. | 01/91 |
| Phase IV (11 months: February 1991 - December 1991) | | |
| Task 16. | Provide policy, managerial and technical support for EWI field activities. | 02/91-12/91 |
| Task 17. | Organize and participate in EWI Workshops, Conferences and Seminars in the region and U.S. | 02/91-12/91 |
| Task 18. | Prepare EWI Interim Report. | 06/91 |
| Task 19. | Review EWI country programs, mobilize advisory teams and produce draft EWI Synthesis Reports. | 09/91-12/91 |
| Task 20. | Prepare EWI Second Annual Report. | 11/91-12/91 |
| Phase V (4 months: January 1992 - April 1992) | | |
| Task 21. | Finalize EWI Synthesis Reports of Country Programs and EWI Program. | 01/92-04/92 |
| Task 22. | Make recommendations for future EWI activities (EWI Phase II) and report. | 02/92 |
| Task 23. | Complete demobilization of EWI country programs and consultants, prepare EWI Phase I Completion Report. | 01/92-04/92 |

INFORMATION DISSEMINATION/PUBLIC PARTICIPATION

The EWI Program has a key role to making the efforts of many donors fit together into a synchronized, coherent program for flood control, drainage and irrigation development within Bangladesh and, to a lesser extent, within the Ganges and Brahmaputra Basins. The program has high visibility and will enable the U.S. to keep commitments made at an international forum and highlight U.S. technology.

The EWI Program will disseminate ideas, Bureau policy initiatives, and the findings of its field activities through workshops, conferences and seminars. It will enable participation on the FAP Panel of Experts, the publication of EWI policy and review papers prepared by the Advisory Panel, and reports and reviews produced by individual country program activities.

WORKSHOPS.

Nine major workshops are planned under EWI:

| | <u>Schedule</u> |
|---|-----------------------------|
| (1) Workshop to discuss EWI Program with Bureau and World Bank. | 12/90 |
| (2) FAP: Workshop to discuss Inception Report of the Flood Proofing Studies and the Environmental Issues Paper in Dhaka. | 01/91 |
| (3) FAP: Workshop to discuss Flood Proofing Issues and draft Strategy Paper and the results of the Flood Response Pilot Survey and Inception Report in Dhaka. | 03/91 |
| (4) FAP: Workshop to discuss the Environmental Planning Guidelines, Environmental Manual. | 05/91 |
| (5) FAP: Workshop to discuss the Environmental Special Studies and draft Synthesis Report and the draft Guidelines for Flood Proofing in Dhaka. | 01/92 |
| (6) Bangladesh Agricultural Sector: Workshop to discuss Privatization, Marketing and Agricultural Growth. | 01/92 |
| (7) Workshop in Washington, D.C. to discuss Advisory Groups Evaluation of the EWI Progress. | First 08/91 Second 01/92 |
| (8) Workshop in Washington, D.C. with Bureau and World Bank to discuss EWI Synthesis Report. | 05/92 |

CONFERENCES AND SEMINARS

Three conferences are provisionally planned:

| | <u>Schedule</u> |
|--|-----------------|
| (1) In consultation with the GBD and World Bank the U.S. would host an international conference to discuss the first 18 months experience of the Bangladesh Flood Action Plan: "International Cooperation in Water Resources Planning and Development." This conference would have two objectives (a) to examine how donors have cooperatively worked together to address a major environmental issue; and (b) to examine technical progress under the FAP and the policy and technical issues raised or resolved. Outputs from this conference could be used in the first revision of the FAP by the World Bank following official review and evaluation of the first two years of FAP. | 08/91 |

- (2) The U.S. would present the findings of its EWI studies and invite participation from other FAP donors to discuss the topic: "Developing Agriculture in Floodplain Environments: Issues, Policies and Solutions." EWI would mobilize experts and planners with experience in similar floodplain environments -e.g. Irrawaddy, Mekong, Nile, Sacramento delta, PO in Italy and Yellow River in China. 03/92
- (3) The Bureau would call a seminar in Washington, D.C. lead by the EWI Advisory Group to discuss "EWS, EWI - What Next?" 04/92

REPORTS

These will be produced according to the schedule:

- (1) TORs for EWI Country Programs - Bangladesh; by month 8 06/90
- (2) EWI Work Plan and Budgets; by month 10 08/90
- (3) TORs for EWI Country Programs - India and Nepal; by month 14 12/90
- (4) EWI First Annual Report; by month 14 01/91
- (5) EWI Work Plan 1991/1992; by month 14 01/91
- (6) EWI Interim Report; by month 20 06/91
- (7) EWI Second Annual Report; by month 25 12/91
- (8) EWI Synthesis Report; Draft 12/91
Final 04/92
- (9) Recommendations for EWI Phase II; by month 29 03/92
- (10) EWI Phase I Completion Report; by month 30 04/92

In addition there will be Quarterly Progress Reports from September 1990.

STAFFING

EWI will utilize 347 person months of U.S. personnel and 1,280 person months of professional and support personnel in the EWI region: Bangladesh (1,251), India (20) and Nepal (4); 6 travel allowances and per diem are allocated for government officials to participate in regional seminars and workshops which will require 4.5" of support from in-country consultants.

EWI program management (Activity 670B-1) will utilize 38.2 person months of U.S. personnel and be supported by 65.3 person months provided under TSC Support Services (Activity 670B-2). All other U.S. and regional personnel are budgeted under other EWI program activities. However, recruitment of all U.S. personnel will be the responsibility of EWI Program Management in Washington, D.C. In-country professional and support staff will be identified by the EWI Regional Manager and the FAP Resident Manager and Coordinator and employed through ISPAN/TSC contracts.

The Project Director of ISPAN/TSC is Director of the EWI Program and reports to the Bureau's Eastern Waters Working Group and the ANE ISPAN Project Officer. The EWI Program Manager reports to the Project Director at ISPAN/TSC. Country programs report to the EWI Program Manager. The EWI Advisory Group acts as a peer review group to EWI and provides independent policy guidance, review and evaluation of EWI activities. The Panel of Experts report to the Bureau, U.N.D.P. and the World Bank and work closely with EWI Program Management and the FAP Resident Manager and Coordinator in Bangladesh.

9

EASTERN WATERS STUDY
EWI Program Management and Supervision of Country Programs
and TSC Support

670B - 1
670B - 2

| CALENDAR YEAR | 89 | 1990 | | | | 1991 | | | | 1992 | | | |
|---|----|------|---|---|---|------|---|---|---|------|---|---|---|
| ACTIVITY FISCAL YEAR | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 |
| <i>MAJOR ACTIVITIES:</i> | | | | | | | | | | | | | |
| <i>Phase I: Program Design</i> | | | | | | | | | | | | | |
| 1. London Donors' Conference | ■ | | | | | | | | | | | | |
| 2. Recruit FAP Manager for Bangladesh | | ■ | | | | | | | | | | | |
| 3. Detail EWI Program | | ■ | ■ | | | | | | | | | | |
| 4. Initiate EWI Country Program Staff Recruitment | | | ■ | ■ | | | | | | | | | |
| <i>Phase II: Prepare Detailed Workplan and Budget</i> | | | | | | | | | | | | | |
| 5. Finalize FAP TORs and MOA TAPP | | | | ■ | ■ | | | | | | | | |
| 6. Prepare Work Plan and Budget | | | | ■ | ■ | | | | | | | | |
| 7. Finalize Selection and Recruitment for EWI | | | | ■ | ■ | | | | | | | | |
| <i>Phase III: Initiate EWI Country Programs</i> | | | | | | | | | | | | | |
| 8. Conduct Team Planning Meetings | | | | | ■ | ■ | | | | | | | |
| 9. Mobilize EWI Regional Manager to Bangladesh | | | | | ■ | ■ | | | | | | | |
| 10. India, Nepal Programs | | | | | ■ | ■ | | | | | | | |
| 11. Review FAP Program | | | | | ■ | ■ | | | | | | | |
| 12. Prepare EWI Annual Work Plan 1991-1992 | | | | | ■ | ■ | | | | | | | |
| <i>Phase IV: Manage and Support EWI Programs</i> | | | | | | | | | | | | | |
| 13. Provide Policy, Managerial & Technical Support | | | | | | ■ | ■ | ■ | ■ | | | | |
| 14. Organize and Participate in Workshops, Conferences and Seminars | | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| 15. Prepare Interim Report | | | | | | | ■ | ■ | | | | | |
| 16. Prepare Draft EWI Synthesis Report | | | | | | | | ■ | ■ | | | | |
| <i>Phase V: Complete EWI Phase I</i> | | | | | | | | | | | | | |
| 17. Finalize EWI Synthesis Report | | | | | | | | | | | ■ | ■ | |
| 18. Recommend Future Activities | | | | | | | | | | | ■ | ■ | |
| 19. Demobilize EWI Country Programs | | | | | | | | | | | ■ | ■ | |
| 20. Prepare EWI Phase I Completion Report | | | | | | | | | | | ■ | ■ | |

**EWI Program Management and Supervision of Country Programs and TSC Support
EWI Expatriate (U.S.) Staffing Schedule**

670B-1
670B-2

| CALENDAR YEAR | 89 | 1990 | | | | 1991 | | | | 1992 | | | | TOTAL | |
|---|----|------|---|---|---|------|---|---|---|------|---|---|---|-------|---------------|
| ACTIVITY FISCAL YEAR | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | | |
| <i>Activity 670B-1</i> | | | | | | | | | | | | | | | Person Months |
| EWI Program Manager - D.C. | ■ | ■ | ■ | ■ | ■ | | | | | | | | | | 4.5 |
| EWI Program Manager - Field | ■ | ■ | ■ | ■ | ■ | | | | | | | | | | 5.0 |
| EWI Regional Manager Located in Bangladesh | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | 8.0 |
| EWI Advisory Group - U.S. | | | | | ■ | | | | | | | | | | 2.0 |
| EWI Advisory Group - Field | | | | | | ■ | | | | | | | | | 2.5 |
| Professional TSC Managerial Support | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | 16.2 |
| Subtotal | | | | | | | | | | | | | | | 38.2 |
| <i>Activity 670B-2</i> | | | | | | | | | | | | | | | |
| TSC Logistical & Administrative Support | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | 65.3 |
| <i>Activity 670B-3</i> | | | | | | | | | | | | | | | |
| EWI Advisory Group | | | | | | | | ■ | ■ | ■ | ■ | ■ | | | 13.0 |
| <i>Activity 670B-4</i> | | | | | | | | | | | | | | | |
| Participation in International Meetings - Expatriates | | | | | | | | ■ | | | ■ | ■ | | | 3.0 |
| <i>Activity 670B-5</i> | | | | | | | | | | | | | | | |
| Organize International Conferences and Seminars | | | | | | | | | | | | | | | |
| Professionals | | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | 7.0 |
| TSC Support | | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | 5.0 |
| <i>Activity 670B-6</i> | | | | | | | | | | | | | | | |
| FAP Manager and Coordinator | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | 26.0 |
| Expert Support | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | 5.0 |
| <i>Activity 670B-7</i> | | | | | | | | | | | | | | | |
| Flood Response Study | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | 10.0 |
| <i>Activity 670B-8</i> | | | | | | | | | | | | | | | |
| Environmental Study | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | 53.0 |
| <i>Activity 670B-9</i> | | | | | | | | | | | | | | | |
| Geographic Information System | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | 54.0 |
| <i>Activity 670B-10</i> | | | | | | | | | | | | | | | |
| Flood Proofing Study | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | 9.0 |
| <i>Activity 670B-11</i> | | | | | | | | | | | | | | | |
| Panel of Experts | | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | 12.0 |
| <i>Activity 670B-12</i> | | | | | | | | | | | | | | | |
| Bangladesh: Ministry of Agriculture Management | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | 14.0 |
| Expert Support | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | 17.5 |
| <i>Activity 670B-13</i> | | | | | | | | | | | | | | | |
| India: Flood Forecasting, etc. | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | 11.0 |
| <i>Activity 670B-14</i> | | | | | | | | | | | | | | | |
| Nepal: Policy Dialogue | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | 4.0 |
| EWI Program Total | | | | | | | | | | | | | | | 347.0 |

EWI Program Management and Supervision of Country Programs and TSC Support Report Production Schedule

| CALENDAR YEAR | 89 | 1990 | | | | 1991 | | | | 1992 | | | |
|---|----|------|---|---|---|------|---|----|---|------|----|---|---|
| ACTIVITY FISCAL YEAR | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 |
| 1. EWI Program Reports ◦ Draft • Final | | | | | | | | | | | | | |
| 1.1 TORs for Bangladesh Study | | | | | | | | | | | | | |
| 1.2 EWI Work Plan and Budgets | | | | • | | | | | | | | | |
| 1.3 TORs for India and Nepal | | | | • | | | | | | | | | |
| 1.4 EWI First Annual Report | | | | | • | | | | | | | | |
| 1.5 EWI Work Plan 1991-1992 | | | | | | • | | | | | | | |
| 1.6 EWI Interim Report | | | | | | • | | | | | | | |
| 1.7 EWI Second Annual Report | | | | | | | • | | | | | | |
| 1.8 EWI Synthesis Report | | | | | | | | | • | | | | |
| 1.9 Recommendations for EWI Phase II | | | | | | | | | ◦ | | | | |
| 1.10 EWI Phase I Completion Report | | | | | | | | | | • | | | |
| 1.11 Quarterly Progress Report | | | | | | | | | | • | | | |
| 2. Bangladesh Flood Action Plan | | | | | | | | | | | | | |
| 2.1 Program Management | | | | | | | | | | | | | |
| 2.11 Annual Work Plan 1990/1991 | | | | | | | | | | | | | |
| 2.12 Mid-Term Report | | | | | ◦ | | | | | | | | |
| 2.13 FAP Completion Report | | | | | | | • | | | | | | |
| 2.14 FAP Synthesis Report | | | | | | | | ◦ | • | | | | |
| 2.15 Quarterly Progress Report | | | | | • | • | • | • | • | • | • | | |
| 2.2 Flood Response Study | | | | | | | | | | | | | |
| 2.21 Inception | | | | | • | | | | | | | | |
| 2.22 Pilot Survey Evaluation | | | | | | • | | | | | | | |
| 2.23 Main Survey Evaluation | | | | | | | • | | | | | | |
| 2.24 Planning Guidelines | | | | | | | | | ◦ | • | | | |
| 2.25 Completion Report | | | | | | | | | ◦ | • | • | | |
| 2.3 Environmental Study | | | | | | | | | | | | | |
| 2.31 Inception | | | | | | | | | | | | | |
| 2.32 Environmental Position Paper | | | | | | | • | | | | | | |
| 2.33 Draft Guidelines for Workshop | | | | | | • | | | | | | | |
| 2.34 Final Guidelines and Manual | | | | | | | | ◦ | | | | | |
| 2.35 Report on Special Studies | | | | | | | | • | | | | | |
| 2.36 Completion Report | | | | | | | | | ◦ | • | • | | |
| 2.4 Geographic Information System | | | | | | | | | | | | | |
| 2.41 Inception Report | | | | | | • | | | | | | | |
| 2.42 User Survey Report | | | | | | | | • | | | | | |
| 2.43 Interim Report (Phase I) | | | | | | | | • | | | | | |
| 2.44 Digital Terrain Model | | | | | | | | | ◦ | • | | | |
| 2.45 Phase II Completion Report | | | | | | | | | | ◦ | | | • |
| | | | | | | | | | | | | | • |
| | | | | | | | | | | | | | • |
| 3. India | | | | | | | | | | | | | |
| 3.1 Inception Report and Workshop | | | | | | | | | | | | | |
| 3.2 Interim Report | | | | | | | | | | | | | |
| 3.3 Completion Report | | | | | | | | | | | | | |
| 4. Nepal | | | | | | | | | | | | | |
| 4.1 Inception Report and Work Plan | | | | | | | | | | | | | |
| 4.2 Interim Report | | | | | | | | | | | | | |
| 4.3 Completion Report | | | | | | | | | | | | | |
| 5. Conference/Seminar Proceedings | | | | | | | | | | | | | |
| 5.1 Mid-Term Review of the Bangladesh Flood Action Plan | | | | | | | | | | | | | |
| 5.2 "Developing Agriculture in Floodplain Environments: Issues, Policies & Solutions" | | | | | | | | | | | | | |
| 5.3 Bureau: "EWS, EWI - What Next?" | | | | | | | | | | | | | |
| Total | | | | 1 | 4 | 6 | 7 | 10 | 7 | 11 | 11 | 5 | 3 |

EASTERN WATERS STUDY
EWI Program Management and Supervision of Country Programs
and TSC Support

Workshops, Conferences and Seminars

670B - 1

| CALENDAR YEAR | 89 | 1990 | | | | 1991 | | | | 1992 | | | |
|---|----|------|---|---|---|------|---|---|---|------|---|---|---|
| ACTIVITY FISCAL YEAR | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 |
| WORKSHOPS □ | | | | | | | | | | | | | |
| 1. Workshop in U.S. To Discuss EWI Work Plan | | | | | □ | | | | | | | | |
| 2. Bangladesh Flood Action Plan | | | | | | □ | | | | | | | |
| 2.1 Environmental and Flood Proofing Studies | | | | | | | | | | | | | |
| 2.2 Flood Proofing Strategies and Flood Response Pilot Surveys and Guidelines | | | | | | | □ | | | | | | |
| 2.3 Environmental Guidelines and Manual, GIS User Survey and Pilot Study | | | | | | | | □ | | | | | |
| 2.4 Findings of Environmental, Flood Response and Flood Proofing Studies | | | | | | | | | | □ | | | |
| 2.5 GIS Phase I Recommendations and Digital Terrain Model | | | | | | | | | | | □ | | |
| 3. Bangladesh Agricultural Sector: "Privatization, Marketing and Agricultural Growth" | | | | | | | | | | □ | | | |
| 4. Evaluation of EWI Progress | | | | | | | | | □ | □ | | | |
| 5. EWI Synthesis Report | | | | | | | | | | | | □ | |
| INTERNATIONAL CONFERENCES/SEMINARS | | | | | | | | | | | | | |
| 1. Mid-Term Discussion of "Donors' Experience of the Bangladesh Flood Action Plan and International Cooperation in Water Resources Development" | | | | | | | | | □ | | | | |
| 2. Developing Agriculture in Flood Plain Environments: Issues, Policies and Solutions | | | | | | | | | | | □ | | |
| 3. Bureau: "EWS, EWI; What Next?" | | | | | | | | | | | | □ | |

13

EASTERN WATERS INITIATIVE

EWI Advisory Group

DESCRIPTION:

This activity will be funded by the Bureau under EWI III. The EWS Team initiated an important dialogue concerning a number of critical issues within Bangladesh, India and Nepal which the USAID Missions are attempting to continue with the various Ministries of Water Resources and Planning, and associated institutions and centers of some of the research areas identified in the EWS. This continuing dialogue under EWI is of paramount importance, for through it the concerned decision makers and institutions may support and endorse necessary analyses and studies and subsequent findings on basin issues. Given the U.S. water resources experience, professional credibility and familiarity with the issues, we have an overwhelming comparative advantage and unique role to play in working with senior officials in each country, backed by limited A.I.D. grant funding, to develop, improve and/or implement critical analyses and studies.

The EWI is expected to provide a considerable body of new knowledge and empirical data as well as numerous opportunities for creative dialogue and synergy.

There are two major objectives to:

- provide an overview of the EWI programs focusing on key concepts, new ideas, potential innovations, highlighting critical issues, investigating new alternatives, comparative analysis;
- provide a synthesis of lessons learned on which future agency program and policy can be based.

These synthesis papers will provide an opportunity for the Bureau to deal with regional issues and strategic concerns which extend beyond Mission concerns. The EWI would this provide additional support for the Bureau's ongoing dialogue on these issues in international fora.

SCHEDULE:

The Advisory Group will have 4 tasks:

| | | <u>Schedule</u> |
|---------|--|-----------------|
| Task 1. | Visit Bangladesh, India and Nepal to discuss EWS and EWI with Mission and Government and recommend a program for EWI. | 12/89-12/90 |
| Task 2. | Make periodic visits to the EWI region to review established EWI program and identify and report on critical issues, policy initiatives and innovations needed to meet EWI objectives. | 09/90-12/91 |
| Task 3. | Review outputs from the Bangladesh FAP and activities in the agricultural sector and produce synthesis reports for the Bureau. | 09/91-04/92 |
| Task 4. | Critically review and synthesize EWI program outputs; recommend future activities under extensions of EWI. | 01/92-04/92 |

INFORMATION DISSEMINATION/PUBLIC PARTICIPATION:

Members of the Advisory Group will actively link Bureau and Mission objectives to formulating and critically reviewing EWI programs developed cooperatively with the governments of the EWI region. They will seek the views of policy makers, academicians, government and non-government leaders, and individuals, to ensure the program fully reflects regional concerns, issues and priorities. They will link and network the substantial U.S. knowledge and resources to EWI activities in the region and contribute to organizing international conferences and seminars (670B-5).

The Advisory Group will present their interim views and recommendations in a series of small workshops in Washington, D.C. and within Bangladesh, India and Nepal. The two synthesis reports will be presented at a seminar in Washington, D.C.: "EWS, EWI - What Next?" in April 1992.

Schedule

REPORTS. These will be produced according to the schedule:

| | | | | |
|-----|--|----------|-------|-------|
| (1) | Synthesis Report on the EWI activities under the Bangladesh Flood Action Plan with particular emphasis on the integrating role of Environmental Studies; | by month | Draft | 12/91 |
| | | | Final | 04/92 |
| (2) | EWI Synthesis Report; | by month | Draft | 12/91 |
| | | | Final | 04/92 |

STAFFING:

Thirteen person months have been allocated to this activity: eight in the U.S. for consultation and synthesis report writing; five in-country for interviewing, gaining and disseminating information.

Regular visits by special experts such as Rogers, Coleman, Hamilton, Jones, etc. over the next year or two would enable us to move forward on a better understanding of the basin dynamics and development options with the concerned governments and their own institutions and consultants. Such U.S. bilateral professional support and exchange to improve the basin states own analytical capabilities will be a substantial part of an Eastern Waters Initiative.

15

EASTERN WATERS INITIATIVE

Attendance/Participation at International Meetings

DESCRIPTION:

This activity is funded by the Bureau under EWI I & II. International meetings, whether organized under EWI or by other organizations and programs, provide important opportunities to disseminate the outcomes of this program, build and extend existing networks, and engage senior government officials and experts in a process of dialogue essential to the success of EWI.

SCHEDULE:

Meetings are normally notified to potential participants by their organizers 3 to 9 months in advance. EWI Program management will screen and recommend international meetings as they are notified and found relevant to EWI objectives.

INFORMATION DISSEMINATION/PUBLIC PARTICIPATION:

Participants will be expected to present a brief summary paper describing the international conference they attend. It will highlight the papers and discussions pertinent to EWI objectives and their own government's objective.

STAFFING:

Appropriate program staff and participants will be identified for each opportunity. Provision has been made for the participation of six senior government officials from the EWI regional governments to include travel and per diem costs only. Two person months of professional expatriate time is included for coordination, organization, and limited participation in the international meetings.

EASTERN WATERS INITIATIVE

Organizing International Conferences and Seminars

DESCRIPTION:

This activity would be funded by the Bureau under EWI V. The EWI Program has a key role to making the efforts of many donors fit together into a synchronized, coherent program for flood control, drainage and irrigation development within Bangladesh and, to a lesser extent, within the Ganges and Brahmaputra Basins. The program has high visibility and will enable the U.S. to keep commitments made at an international forum and highlight U.S. technology.

The EWI Program will disseminate ideas, Bureau policy initiatives, and the findings of its field activities through workshops, conferences and seminars. It will enable participation on the FAP Panel of Experts, the dissemination of EWI policy and review papers prepared by the Advisory Panel, and reports and reviews produced by individual country program activities. This dialogue is of paramount importance, for through it the concerned decision makers and institutions may support and endorse necessary analyses and studies and subsequent findings on basin issues. Given the U.S. water resources experience, professional credibility and familiarity with the issues, we have an overwhelming comparative advantage and unique role to play in working with senior officials in Bangladesh, India and Nepal, to develop, improve and/or implement critical analyses and studies and present the results in special conferences and seminars. The professional exchange and understanding will contribute towards a better understanding of the basin dynamics and development options with the concerned governments and their own institutions and consultants.

SCHEDULE:

There are 3 phases and 21 tasks to be completed:

Phase I (12 months: January 1991 - December 1991)

International Conference "International Cooperation in Water Resources Planning and Development" (Probable Location-Bangladesh).

| | <u>Schedule</u> |
|---|-----------------|
| Task 1. Brief conference organizer/facilitator; engage editorial review panel; detail conference budget and arrangements. | 01/91 |
| Task 2. Prepare and circulate a proposal for the conference and call for papers to likely participants and press. | 01/91 |
| Task 3. Review abstracts of papers, edit and circulate to conference participants. | 04/91 |
| Task 4. Make arrangements for accommodation, conference center and support services. | 05/91-08/91 |
| Task 5. Review conference papers, edit and circulate to participants at conference registration. | 06/91-08/91 |
| Task 6. Conduct conference. | 08/91 |
| Task 7. Produce and edit proceedings of the conference and finalize amended versions of papers. | 11/91 |
| Task 8. Print and distribute conference proceedings. | 12/91 |

Phase II (10 months: September 1991 - June 1992)

International Conference "Developing Agriculture in Floodplain Environments: Issues, Policies and Solutions (Probable Location-Thailand).

| | <u>Schedule</u> |
|---|-----------------|
| Task 1. Brief conference organizer/facilitator; engage editorial review panel; detail conference budget and arrangements. | 09/91 |
| Task 2. Identify key individuals/organizations who have contributed to agricultural and social/economic development of floodplains and invite key-note speakers (Burma-Irrawaddy; Mekong Commission; Nile; Sacramento in U.S.; Po in Italy; Yellow River in China). | 09/91 |
| Task 3. Prepare and circulate a proposal for the conference and call for papers to likely participants and press. | 09/91 |
| Task 4. Review abstracts of papers, edit and circulate to conference participants. | 12/91 |
| Task 5. Make arrangements for accommodation, conference center and support services. | 09/91-03/92 |
| Task 6. Review conference papers, edit and circulate to participants at conference registration. | 01/92 |
| Task 7. Conduct conference. | 03/92 |
| Task 8. Produce and edit proceedings of the conference and finalize amended versions of papers. | 05/92 |
| Task 9. Print and distribute conference proceedings. | 06/92 |

Phase III (19 months: October 1990 - June 1992)

Washington, D.C. Seminar: "EWS, EWI - What Next?"

| | |
|---|-------|
| Task 1. Conduct TPM with Advisory Group to discuss outlines of the Synthesis reports that will be the basis for discussions and their production schedule (see Activity 670B-3) | 10/90 |
| Task 2. Brief seminar facilitators; prepare papers for the seminar; make arrangements for accommodations/facilities. | 01/92 |
| Task 3. Conduct Seminar. | 04/92 |
| Task 4. Produce, edit and circulate seminar proceedings and recommendations. | 06/92 |

INFORMATION DISSEMINATION/PUBLIC PARTICIPATION:

Members of the Advisory Group (670B-3), the Panel of Experts (670B-5) and team members of the various EWI activities would contribute papers and reports to the conferences and seminars listed as follows:

CONFERENCES AND SEMINARS. Three conferences are provisionally planned:

Schedule

- (1) In consultation with the GBD and World Bank the U.S. would host an international conference to discuss the first 18 months experience of the Bangladesh Flood Action Plan: "International Cooperation in Water Resources Planning and Development." This conference would have two objectives (a) to examine how donors have cooperatively worked together to address a major environmental issue; and (b) to examine technical progress under the FAP and the policy and technical issues raised or resolved. Outputs from this conference could be used in the first revision of the FAP by the World Bank following official review and evaluation of the first two years of FAP. 08/91
- (2) The U.S. would present the findings of its EWI studies and invite participation from other FAP donors to discuss the topic: "Developing Agriculture in Floodplain Environments: Issues, Policies and Solutions." EWI would mobilize experts and planners with experience in similar floodplain environments -e.g. Irrawaddy, Mekong, Nile, Sacramento delta, PO in Italy and Yellow River in China. 03/92
- (3) The Bureau would call a seminar in Washington, D.C. lead by the EWI Advisory Group to discuss "EWS, EWI - What Next?" 04/92

ISPAN/TSC would ultimately be responsible for the publication of the proceedings of these conferences and seminars generally three months after each meeting.

STAFFING:

Provisionally, the budget allows for four person months of TSC professional staff, and five person months of TSC support staff. Two person months of the Advisory Group time, and three person months of professional time from the consortium is included. Support for in-country regional staff is estimated at four and one half person months.

EASTERN WATERS INITIATIVE

Bangladesh (FAP): Management and Coordination

DESCRIPTION:

A meeting was called in London (December, 1989) to discuss and endorse the *Action Plan for Flood Control in Bangladesh (FAP)*, a twenty-six component short-term action and study program prepared by the World Bank after the G-7 meetings in Paris. The *Action Plan* contains eleven major components--regional or specific feasibility studies, and action programs, such as town and cyclone protection and flood forecasting and preparedness--and fifteen supporting activities--studies and pilot projects to provide data required for investment decisions. The World Bank will coordinate the implementation of the *Action Plan*, its components and studies, with U.N.D.P. funding, and the Government of Bangladesh has established an elaborate organizational arrangement to facilitate the process through its Flood Plan Coordination Organization (FPCO).

The U.S. will lead four studies which are consistent with the intent of EWI and clearly draw on comparative strengths of the U.S.:

- FAP 14. Socio-Economics Study--Flood Response
- FAP 16. Environment Study
- FAP 19. Geographic Information System (GIS)
- FAP 23. Flood Proofing Pilot Project

The Floodplain Agriculture and Environmental studies, in particular, will be important synthesizing activities, with concomitant high visibility. ISPAN/EWI will be the mechanism for carrying out these studies.

The ISPAN/EWI studies under the FAP will leverage additional funding. EWI will design the Flood Proofing Pilot Project, at an estimated cost of \$206,000, and Sweden and Australia will fund the pilot itself (\$6.8 million). ISPAN/EWI will also leverage an estimated \$729,000 in Mission funds to strengthen the GIS component, building on previous Mission investments.

In consequence of the above, ISPAN/EWI will provide a full-time Resident Manager and Coordinator in Bangladesh to take responsibility for the FAP activities and maintain coordination with USAID/Dhaka and participating donors.

The objectives of this activity are to:

- provide day-to-day coordination with the USAID Mission and the Government of Bangladesh's (GBD's) Flood Plan Coordination Organization (FPCO);
- liaise with the USAID Mission, FPCO and GBD to ensure that the necessary approvals for initiating EWI activities and fielding staff in-country are completed as soon as possible;
- manage and coordinate the four FAP activities for ISPAN/EWI in the field;
- ensure continued coordination and communication with other donors and agencies in Bangladesh concerned with the FAP;
- provide technical and administrative backstopping for FAP activities in Bangladesh and EWI activities in the region.

SCHEDULE:

This activity has four phases and 14 tasks:

| | <u>Schedule</u> |
|--|-----------------|
| Phase I (3.5 months: January 1990 - April 1990) | |
| Task 1. Prepare the TOR for the four FAP activities in consultation with FPCO, TSC and AID/Washington. | 01/90-03/90 |
| Task 2. Prepare expatriate and local staffing plans for each FAP activity, and draft FAP workplan. | 04/90-04/90 |
| Phase II (6 months: May 1990 - September 1990) | |
| Task 3. Establish ISPAN/EWI/FAP office in Bangladesh. | 05/90-09/90 |
| Task 4. Finalize FAP TORs following Panel of Experts June 1990 meeting. | 06/90-06/90 |
| Task 5. Initiate identification and recruitment of Bangladeshi consultants in consultation with TSC, USAID Mission and AID/Washington. | 07/90-09/90 |
| Task 6. Finalize FAP workplan in consultation with TSC. | 09/90-09/90 |
| Phase III (15 months: October 1990 - December 1991) | |
| Task 7. Manage and coordinate FAP activities in the field. | 10/90-12/91 |
| Task 8. Provide administrative and technical support for EWJ regional studies. | 10/90-12/91 |
| Task 9. Provide technical support as Resident Water Resources Planner/Advisor to FAP activities. | 10/90-12/91 |
| Task 10. Coordinate Synthesis Report writing for FAP activities with Advisory Panel and Panel of Experts. | 09/91-12/91 |
| Task 11. Produce Quarterly and Annual Reports as required by TSC. | 10/91-12/91 |
| Task 12. Demobilize FAP Team from Bangladesh. | 11/91-12/91 |
| Phase IV (3 months: January 1992 - March 1992) | |
| Task 13. Demobilize EWJ office in Bangladesh. | 01/92-02/92 |
| Task 14. Provide managerial and technical support at TSC/DC for the completion of Final and Synthesis Reports of the FAP and EWJ. | 02/92-03/92 |

INFORMATION DISSEMINATION/PUBLIC PARTICIPATION:

The FAP Resident Manager and Coordinator, in consultation with FPCO, will be the key individual for ensuring that the U.S.'s activities under the FAP are clearly coordinated and results of studies disseminated so that the efforts of many donors fit together into a synchronized, coherent program. He will maintain close links with the USAID Mission and ISPAN TSC/DC and ensure two-way communication between USAID/Dhaka and FPCO.

WORKSHOPS. This activity will provide administrative, logistical and technical support for six major workshops planned under the four FAP activities (described under each activity).

CONFERENCES AND SEMINARS. This activity will provide administrative, logistical and technical support, as needed, to support three regional conferences/seminars planned under Activity 670B-4. In addition, the FAP Resident Manager and Coordinator will call periodic conferences with FPCO, other donors and the public to disseminate the results of ongoing studies and poll public opinion and knowledge.

REPORTS. These will be produced according to the schedule:

- | | | | |
|-----|--|--------------|-------|
| (1) | Draft Annual Work Plan; | by month 8 | 09/90 |
| (2) | FAP Annual Work Plan (following each activities' Inception Reports); | by month 12 | 01/91 |
| (3) | Quarterly Administrative and Financial Progress Reports; | from month 9 | 09/90 |
| (4) | FAP Mid-Term Report; | | 06/91 |
| (5) | FAP Completion Report; | Draft | 10/91 |
| | | Final | 12/91 |
| (6) | FAP Synthesis Report; | | 03/92 |

STAFFING:

ISPAN/EWI will field 31 person months of expatriate consultants. This team will be supported by 32 person months of Bangladeshi consultants and 160 person months of support staff (secretaries (5), data processors (1), office manager (1), accountants (2), etc.).

The FAP Resident Manager and Coordinator will be full-time and report to the EWI Regional Manager and the Project Director, ISPAN/TSC. The FAP Resident Manager and Coordinator will provide logistical, administrative and technical support to the U.S. participants on the Panel of Experts and the EWI Advisory Group. He will be supported by a full-time senior Bangladeshi consultant who will arrange and participate in coordination and communication with the Bangladesh Government, NGOs and private individuals. A mid-level consultant will have full-time responsibility for the planning, implementation and reporting of all workshop, conference and seminar activities after initial training at ISPAN/TSC.

In addition to his managerial and coordination duties, the FAP Regional Manager and Coordinator will provide services to the four FAP activities as Water Resource Planner/Advisor.

22

EASTERN WATERS STUDY

Bangladesh (FAP): Management and Coordination

670B - 6

| CALENDAR YEAR | | 1990 | | | | 1991 | | | | 1992 | | | | TOTAL |
|--|-------------|------|---|---|---|------|---|---|---|------|---|---|---------------|-------|
| ACTIVITY | FISCAL YEAR | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | |
| ACTIVITIES: | | | | | | | | | | | | | | |
| Phase I: Inception Period | | | | | | | | | | | | | | |
| Prepare TORs for FAP | | ■ | | | | | | | | | | | | |
| Prepare Staffing Plans | | ■ | | | | | | | | | | | | |
| Phase II: Establish EWI in Bangladesh | | | | | | | | | | | | | | |
| Establish Office | | ■ | | | | | | | | | | | | |
| Finalize FAP TORs | | ■ | | | | | | | | | | | | |
| Identify, Recruit Local Consultants | | ■ | | | | | | | | | | | | |
| Finalize FAP Work Plan | | ■ | | | | | | | | | | | | |
| Phase III: FAP Studies | | | | | | | | | | | | | | |
| Manage and Coordinate | | ■ | | | | | | | | | | | | |
| Provide Support to EWI Regional Studies/Activities | | ■ | | | | | | | | | | | | |
| Technical Input to FAP Studies | | ■ | | | | | | | | | | | | |
| Coordinate/Liaise with Advisory Group and Panel of Experts | | ■ | | | | | | | | | | | | |
| Demobilize FAP Team | | ■ | | | | | | | | | | | | |
| Phase IV: Completion | | | | | | | | | | | | | | |
| Demobilize EWI Office | | ■ | | | | | | | | | | | | |
| Provide Support to TSC for Synthesis Reports | | ■ | | | | | | | | | | | | |
| CONSULTATION/DISSEMINATION | | | | | | | | | | | | | | |
| Workshops/Conferences | | ■ | | | | | | | | | | | | |
| Reports: ○ Draft ● Final | | | | | | | | | | | | | | |
| Annual Work Plan | | ○ | | | | | | | | | | | | |
| Quarterly Reports | | ● | | | | | | | | | | | | |
| FAP Mid-Term Report | | ● | | | | | | | | | | | | |
| FAP Completion Report | | ○ | | | | | | | | | | | | |
| FAP Synthesis Report | | ● | | | | | | | | | | | | |
| STAFFING: | | | | | | | | | | | | | | |
| Diplomate: | | | | | | | | | | | | | | |
| Resident Manager & Coordinator | | ■ | | | | | | | | | | | | |
| Washington, D.C. | | ■ | | | | | | | | | | | | |
| Dhaka, Bangladesh | | ■ | | | | | | | | | | | | |
| Bangladeshi Senior Management | | ■ | | | | | | | | | | | | |
| Bangladeshi Conference/Workshop Organizer | | ■ | | | | | | | | | | | | |
| Bangladeshi Support Staff | | ■ | | | | | | | | | | | | |
| | | | | | | | | | | | | | Person Months | |
| | | | | | | | | | | | | | 4 | |
| | | | | | | | | | | | | | 22 | |
| | | | | | | | | | | | | | 18 | |
| | | | | | | | | | | | | | 18 | |
| | | | | | | | | | | | | | 160 | |

EASTERN WATERS INITIATIVE

Bangladesh (FAP): Flood Response Study^a

DESCRIPTION:

The Bureau wholly funds this study (670B-7) and Phase I of the Flood Proofing Pilot Project (670B-10). These two studies are complementary to each other and cover non-structural and structural flood responses and proofing in both rural and urban areas. As conceived in the FAP Report^b this study will examine how people living in rural communities on the active flood plains respond to floods. It will also examine agricultural and small rural community flood response, especially how people responded in the 1987 & 1988 floods. The response of private industries, local government and central government to floods affecting municipal and urban areas, and public sector infrastructure throughout the country will be examined under the Flood Proofing Pilot Study.

The overall objective of this 17 month Flood Response Study is to identify effective measures to avoid or reduce the adverse human, infrastructural and economic effects of flooding in Bangladesh, particularly in unprotected areas. The study will document present responses of individuals and communities to floods; assess the extent to which these and other approaches can be developed to improve the flood preparedness of individuals and communities in flood vulnerable areas; and develop policy guidelines and planning criteria to be used in regional studies under the FAP.

There are four major objectives:

- assess the existing flood response practices of people living in the flood plain areas;
- assess likely impacts of embankments and compartments on flood response activities;
- evaluate flood responsiveness at selected sites in different agro-ecological zones on the flood plain zones to determine improved mechanisms of flood responsiveness;
- identify issues and needed policy changes, make policy recommendations, and prepare guidelines on ways of enhancing effective flood response and criteria for use in the planning, design and operation of FAP Regional Planning and Projects.

SCHEDULE:

This activity will have two phases during which seven tasks will be completed:

Phase I (4 months: October 1990 - January 1991)

| | <u>Schedule</u> |
|------------------------------------|-----------------|
| Task 1. Inception Study | 10/91-12/91 |
| Task 2. Conduct Pilot Survey | 11/90-12/90 |
| Task 3. Evaluation of Pilot Survey | 01/90 |

Phase II (13 months: February 1991 - February 1992)

| | |
|---|-------------|
| Task 4. Conduct Main Survey | 02/91-10/91 |
| Task 5. Finalize Guidelines | 05/91-12/91 |
| Task 6. Evaluation of Main Survey & Guidelines, Preparation of Draft Final Report | 07/91-12/91 |
| Task 7. Final Report | 01/92-02/92 |

^a Bangladesh Flood Action Plan (FAP) Supporting Study #14: Flood Response.

^b The Bangladesh Flood Action Plan. The World Bank, December 1989.

INFORMATION DISSEMINATION/PUBLIC PARTICIPATION:

WORKSHOPS. There will be two workshops which will disseminate the results of the study and ensure public participation.

| | | <u>Schedule</u> |
|-----|--|---------------------|
| (1) | Workshop to discuss the results of the Pilot Survey the recommendations of the Inception Report; | month 6 03/91 |
| (2) | Workshop to discuss the findings of the main field survey and the resulting Draft Planning Guidelines, agree on policy framework governing the application of the Guidelines to FAP Regional Planning and Projects, and make recommendations for the future work program of the FAP. | month 16 01/92 |

During the main survey (Task 4) there will be extensive discussion with individuals, groups and families living on the flood plain, and informal workshops will be held in the region.

REPORTS. These will be produced:

| | | | | |
|-----|-----------------------------------|-------------|-------|-------|
| (1) | Inception Report; | by month 2 | | 11/90 |
| (2) | Pilot Survey Report; | by month 5 | | 02/91 |
| (3) | Evaluation Report after Workshop; | by month 6 | | 03/91 |
| (4) | Main Survey Reports; | by month 12 | Draft | 10/91 |
| | | | Final | 12/91 |
| (5) | Report on guideline Report; | by month 12 | Draft | 12/91 |
| | | | Final | 02/92 |
| (6) | Final Report after Workshop; | by month | Draft | 01/92 |
| | | | Final | 02/92 |

STAFFING:

ISPAN/EWI will field 14 person months of expatriate staff to guide and support this activity. The study will be lead by a full-time Bangladeshi Social Scientist who will be responsible for 204 person months of Bangladeshi consultants and 150 person months of field support staff.

The Bangladeshi Team Leader will report to the FAP Resident Manager and Coordinator who will input 4 person months as Water Resources Engineer over the 17 month period.

The study team will work closely with the ISPAN/EWI team conducting the Flood Proofing Study (Activity 670B-10) and provide technical input as needed.

The study team will also maintain effective technical liaison with GOB Ministries and Agencies and relevant donor experts to minimize duplication and ensure that the various activities are, as far as possible, mutually supporting. The team will review periodically and incorporate into the flood proofing study relevant findings and recommendations from activities of the various international donors, such as UNDP, ADB, CIDA, and the World Bank.

The senior experts provided through the Advisory Group (Activity 670B-3) and the Panel of Experts (Activity 670B-11) will provide periodic peer review of this activity. The Advisory Group will review project outputs, relate them to EWI and the overall FAP, and produce the EWI Synthesis Report.

EASTERN WATERS STUDY

Bangladesh Flood Action Plan: Flood Response

670B - 7

| FISCAL YEAR | 1990 | | | 1991 | | | | 1992 | | | | TOTAL | |
|---|------|---|---|------|---|---|---|------|---|---|---|-------|---|
| YEAR | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | | 1 |
| IES: Phase I Phase II | | | | ■ | ■ | ■ | ■ | ■ | ■ | | | | |
| on Study and Pretesting ionnaire ury tion of Pilot Survey ury ation of Guidelines ation of Final Report | | | | ■ | ■ | ■ | ■ | ■ | ■ | | | | |
| ATION/DISSEMINATION ps/Conferences □ o Draft • Final | | | | ● | ■ | ■ | ■ | ■ | ■ | | | | |
| ion ury Evaluation Survey Evaluation ng Guidelines ction Report | | | | ● | ● | | | ○ | ○ | | | | |
| NG: tes gist pologist Resources Engineer tes Total eshi: Prof. Staff eshi: Support Staff | | | | ■ | ■ | ■ | ■ | ■ | ■ | | | | |
| | | | | | | | | | | | | | Person Months 4 6 4 <u>14</u> 204 150 |

ion will be filled by FAP Resident Manager and Coordinator funded under Activity 670B-6. The team leader will be a Bangladesh Social Scientist (full time over 17 months) and be supported by senior level anthropologist(s) and a senior level Farming Systems Agronomist; at least one of these Social Scientist/Anthropologist(s) will be female. Mid-level, junior level consultants and support staff will include male and female staff to ensure village level access to a representative cross section of rural society.

EASTERN WATERS INITIATIVE

Bangladesh (FAP): Environmental Study^a

DESCRIPTION:

This 17 month study will assess the environmental impacts of water control projects in Bangladesh and make recommendations so that the adverse impacts are avoided or mitigated in the planning, design, and operation of FAP projects. Guidelines for Environmental Examinations (EE) and Environmental Impact Assessments (EIA) and a Users' Manual will be developed and key environmental issues needing further study examined. A final synthesis report will define policy, planning and institutional needs and issues, and make recommendations to mitigate impacts, and describe further environmental studies.

The objectives of the Environmental Study are to:

- identify environmental issues through a review of available literature and studies; consultations with flood-control project planners; and field visits to completed flood control and drainage projects and proposed-project sites and prepare an issues paper;
- prepare guidelines and a user's manual for EE and EIA of (FCD/I) projects for use in regional and feasibility studies;
- assess the likely environmental impacts of flood control projects and develop recommendations so that the adverse environmental impacts are avoided, as far as possible, in the design, execution and operation of the projects under the FAP;
- undertake special studies of specific environmental issues identified (e.g., the impact of FCD/I projects on soil productivity, salinity, public health, groundwater recharge, wetlands, fisheries, upland ecosystems, and wildlife) and periodically report as needed;
- assess needs for training GOB personnel in EIA methods for FCD/I projects;
- organize workshops to discuss the environmental implications of FCD/I projects, assess mitigation measures and actions, recommend appropriate policies and to review project reports (e.g., EE/EIA guidelines and manual); and
- prepare a synthesis report and plan for activities to be undertaken in follow-on studies.

SCHEDULE:

This activity will have two phases during which ten tasks will be completed:

Phase I (4 months: October 1990 - January 1991)

Schedule

| | | |
|---------|--|-------------|
| Task 1. | Prepare an Environmental Position Paper. | 10/90-11/90 |
| Task 2. | Design Special and Case Studies. | 11/90-01/91 |
| Task 3. | Produce the Inception Report and detailed activity workplan. | 10/90-01/90 |

Phase II (13 months: February 1990 - February 1991)

| | | |
|---------|--|-------------|
| Task 1. | Prepare Draft EE and EIA Guidelines. | 02/91-04/91 |
| Task 2. | Carry out Case Studies. | 02/91-10/91 |
| Task 3. | Assess institutional capability for EE & EIA. | 02/91-03/91 |
| Task 4. | Provide EE and EIA Training. | 02/91-02/92 |
| Task 5. | Finalize EE and EIA Guidelines and draft manual. | 05/91-07/91 |

^a This is the Bangladesh Flood Action Plan (FAP) Supporting Study #16: Environmental Study which is funded wholly by the Bureau.

| | | |
|---------|--|-------------|
| Task 6. | Carry out Special Studies. | 12/90-10/91 |
| Task 7. | Final Synthesis Report, including EIA manual and recommendation for future activities. | 01/91-02/92 |

INFORMATION DISSEMINATION/PUBLIC PARTICIPATION:

WORKSHOPS. There will be three workshops which will disseminate the results of the study and ensure public participation, assess mitigation measures and actions, and recommend appropriate environmental policies:

| | | <u>Schedule</u> |
|-----|---|---------------------|
| (1) | Workshop to discuss the Environmental Position paper and the environmental work program under FAP; | month 4 01/91 |
| (2) | Workshop to discuss the Draft EE and EIA Guidelines for regional and project planning; | month 8 05/91 |
| (3) | Workshop to discuss the Final Guidelines, Draft Environmental Manual, and Draft Synthesis Report, and agree on a policy framework to ensure utilization of the Guidelines within the FAP and determine a plan for needed follow-on studies, mitigating action, and policy reform. | month 16 01/92 |

In addition, to the more formal workshops, there will be informal regional workshops and discussions which will enable participation of affected peoples in the floodplain.

REPORTS. These will be produced according to the schedule:

| | | |
|-----|---|------------------------|
| (1) | Environmental Position Paper (for workshop in month 4); | by month 2 12/90 |
| (2) | Inception Report; | by month 4 01/91 |
| (3) | Draft EE/EIA Guidelines (for workshop in month 8); | by month 7 04/91 |
| (4) | Final EE/EIA Guidelines and Draft Manual; | by month 9 06/91 |
| (5) | Reports on Special Studies; | by month 14 11/91 |
| (6) | Draft Synthesis & Final Report (for workshop in month 16); | by month 15 12/91 |
| (7) | Final Synthesis Report including recommended follow-on studies. | by month 17 02/92 |

STAFFING:

ISPAN/EWI will field 55 person months of expatriate staff and utilize 130 person-months of Bangladeshi consultants. Case and special studies will require 130 person-months of Bangladeshi technical support staff. The study will be supervised by a full time expatriate Team Leader who will report to the FAP Resident Manager and Coordinator.

The study will also maintain effective technical liaison with GOB Ministries and Agencies (e.g., the Ministry of Environment and Forests) and relevant donor experts to minimize duplication and ensure that the various activities are, as far as possible, mutually supporting. The team will review periodically and incorporate into the environmental study relevant findings and recommendations from activities of the various international donors, such as UNDP, ADB, CIDA, and the World Bank.

The senior experts provided through the Advisory Group (Activity 670B-3) and the Panel of Experts (Activity 670B-11) will provide periodic peer review. The Advisory Group will review project outputs, relate them to EWI and the overall FAP, and produce the Environmental Synthesis Report.

EASTERN WATERS STUDY

Bangladesh Flood Action Plan: Environment

670B - 8

| FISCAL YEAR | | 1990 | | | 1991 | | | | 1992 | | | | TOTAL | |
|---------------------------------------|--|------|---|---|------|---|---|---|------|---|---|---|-------|-----------------|
| YEAR | | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | | 1 |
| PHASES: Phase I Phase II | | | | | ■ | ■ | | | ■ | ■ | | | | |
| Guidelines | | | | | ■ | ■ | ■ | ■ | ■ | ■ | | | | |
| Environmental Position Paper | | | | | ■ | ■ | ■ | ■ | ■ | ■ | | | | |
| Special Studies | | | | | ■ | ■ | ■ | ■ | ■ | ■ | | | | |
| Studies | | | | | ■ | ■ | ■ | ■ | ■ | ■ | | | | |
| Prog./Inst. Development | | | | | ■ | ■ | ■ | ■ | ■ | ■ | | | | |
| Studies | | | | | ■ | ■ | ■ | ■ | ■ | ■ | | | | |
| Final Report Preparation | | | | | ■ | ■ | ■ | ■ | ■ | ■ | | | | |
| DISSEMINATION/DISSEMINATION | | | | | | | | | | | | | | |
| Workshops/Conferences | | | | | | ■ | ■ | | | ■ | | | | |
| ○ Draft ● Final | | | | | | | | | | | | | | |
| Publication | | | | | ● | ● | | | | | | | | |
| Environmental Position Paper | | | | | ● | ● | | | | | | | | |
| Guidelines for Workshop | | | | | | | ○ | | | | | | | |
| Guidelines & Draft Manual | | | | | | | ● | | | | | | | |
| Report on Special Studies | | | | | | | | | ○ | | | | | |
| Completion | | | | | | | | | ○ | ● | | | | |
| PERSONNEL: | | | | | | | | | | | | | | |
| Project Leader | | | | | ■ | ■ | ■ | ■ | ■ | ■ | | | | 17 |
| Senior Economist | | | | | ■ | ■ | ■ | ■ | ■ | ■ | | | | 6 |
| Senior Ecologist | | | | | ■ | ■ | ■ | ■ | ■ | ■ | | | | 7 |
| Senior Ecologist | | | | | ■ | ■ | ■ | ■ | ■ | ■ | | | | 8 |
| Resources Engineer^a | | | | | ■ | ■ | ■ | ■ | ■ | ■ | | | | 4 ^a |
| Scientists^b | | | | | ■ | ■ | ■ | ■ | ■ | ■ | | | | 13 ^b |
| Personnel Total | | | | | ■ | ■ | ■ | ■ | ■ | ■ | | | | 55 |
| Prof. Staff | | | | | ■ | ■ | ■ | ■ | ■ | ■ | | | | 130 |
| Support Staff | | | | | ■ | ■ | ■ | ■ | ■ | ■ | | | | 130 |

Personnel filled by FAP Resident Program Manager and Coordinator funded under Activity 670B-6.

Personnel include:
 Environmental/training
 Health
 Hydrogeologists
 Sedimentologist

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EASTERN WATERS INITIATIVE

Bangladesh (FAP): Geographic Information Systems*

DESCRIPTION:

Bangladesh currently has extensive geographical and geo-referenced resource information which is important for water resource management, development and planning. Such information includes topographic maps and aerial photography, census data, remote sensing data, hydrologic data, agro-ecological zone maps and climatic data. While very valuable, some of these data are little used, in part, due to their limited distribution and, in part, to the difficulty users experience in compiling and reformatting these data on scales that are meaningful for a specific use. Expanded access and timely delivery of these data to users can enhance both the effectiveness and cost of project and program implementation.

Geographic Information System (GIS) is an information technology used to obtain, store, manipulate and retrieve geographical and geo-referenced data. The information they provide may be used to assist project formulation and evaluation and improve flood forecasting and preparedness and aid other FAP activities, including: production of timely thematic maps needed for various levels of management and planning; identification of areas, structures and populations affected by flood control; display of terrain and meteorological conditions that lead to flood conditions or the extent and time series of changes in river-channel location, movement or flooding boundaries; and, aiding assessment of the impact of floods on structures, infrastructure and agricultural crop production.

Recent advances in the technology and reductions in cost of GIS have lead to their wide acceptance by planning and implementing agencies in western countries. This technology is considered to have significant utility for most core and supporting activities under the FAP, and in agriculture and water resources planning.

USAID has earlier funded GIS in Bangladesh at the Space Research and Remote Sensing Organization (SPARRSO). This activity will provide technical assistance to the Flood Plan Coordination Organization (FPCO) and SPARRSO to fully utilize NASA specified upgraded hardware and software systems, strengthen the link between SPARRSO and the water resources development community in general, and the FPCO in particular. In addition, a micro-computer based GIS hardware and software system within FPCO will be provided as the first step in establishing a user-friendly distributed GIS network.

The objectives of this activity are to:

- provide GIS facility (hardware and software) to assist management and planning of data and information needed for the FAP;
- assist the Flood Plan Coordination Organization (FPCO) to establish a distributed GIS network to serve other FAP activities (e.g. regional studies, and other supporting studies);
- promote and establish standardized data protocols and data bases;
- assist cataloging and dissemination of data files by the FPCO;
- provide on-the-job training in GIS to FPCO and other government and NGO personnel directly involved in the FAP and SPARRSO; and
- promote unrestricted access to water resource management and planning data to all parties with legitimate needs.

* This is the Bangladesh Flood Action Plan (FAP) Supporting Study #19: Geographic Information System and is partly funded by the Bureau (Phase I), and partly by a Dhaka Mission buy-in to ISPAN/EWI (Phase II).

SCHEDULE:

This activity has been split into two stages which reflect the source of funding: Stage A (12 months), is fully funded by the Bureau (under EWI I & II), and Stage B (24 months) will be funded by a Dhaka Mission buy-in to ISPAN/EWI (EWI V). Stage A will start in October 1990 and Stage B is anticipated, subject to receipt of the PIO/T, to start in January 1991. There are 11 tasks which will be carried out over the 27 month period of Stages A and B in two phases:

| Phase I (3 months: October 1990 - December 1990) | | <u>Schedule</u> |
|--|--|-----------------|
| Task 1. | Complete Data Review and User Survey. | 10/90-11/90 |
| Task 2. | Review GIS Capabilities and Training Needs in Bangladesh. | 10/90-11/90 |
| Task 3. | Prepare Inception Report including definition of a GIS Demonstration Project. | 11/90-12/90 |
| Phase II (24 months: January 1990 - December 1992) | | |
| Task 4. | Complete GIS Demonstration Project. | 01/91-03/91 |
| Task 5. | Assess User Needs and related GIS Products. | 01/91-03/91 |
| Task 6. | Implement lessons from Demonstration Project in Pilot GIS Projects. | 03/91-09/91 |
| Task 7. | Review Stage A activities, prepare EWI Inception Report. | 09/91 |
| Task 8. | Develop FPCO Databases. | 11/91-03/92 |
| Task 9. | Supply GIS Products to FAP participants including a Digital Terrain Model (DTM). | 10/91-12/92 |
| Task 10. | Provide training in GIS. | 04/91-12/92 |
| Task 11. | Prepare Synthesis Report and recommendations for future GIS activities. | 09/92-12/92 |

INFORMATION DISSEMINATION/PUBLIC PARTICIPATION:

WORKSHOPS. There will be two public workshops which will disseminate the results of the GIS activities to the water and agricultural resources development community in Bangladesh.

| | | <u>Schedule</u> |
|-----|--|----------------------|
| (1) | Workshop to publicize the results of the GIS Demonstration Project (Task 4) and discuss the various User Surveys and Capabilities (Tasks 1,2 and 5) so that the Pilot Projects (Task 6) better serve users' needs. | by month 5 04/91 |
| (2) | Workshop to review knowledge gained from Pilot Projects (Task 6), data harmonization and banking (Task 8), and the initial Digital Terrain Model (Task 9). | by month 14 02/92 |

As part of the continuous training program several small seminars and workshops will be held at FPCO/SPARRSO to update the FAP participants on GIS methodology, techniques of analysis, and customized input-output packages.

REPORTS. These will be produced according to the schedule:

| | | | |
|-----|--|-------------------|-------|
| (1) | Review of User Needs and GIS Capability in Bangladesh; | by month 2 | 11/90 |
| (2) | Inception Report and detailed workplan for Phase II; | by month 3 | 12/90 |
| (3) | GIS Demonstration Project (including video); | by month 7 | 04/91 |
| (4) | User Survey Report; | | 04/91 |
| (5) | Pilot Survey Project Report; | intermittent from | 07/91 |
| (6) | Stage (A) Completion Report; | Draft | 10/91 |
| | | Final | 12/91 |

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| | | | |
|-----|-------------------------------|-------|-------|
| (7) | Digital Terrain Model Report; | Draft | 02/92 |
| | | Final | 10/92 |
| (8) | Stage (B) Completion Report; | Draft | 10/92 |
| | | Final | 12/92 |

STAFFING:

ISPAN/EWI will field 62 person months of expatriate consultants. Stage A will utilize a full-time team leader (12 person months) and 12 person months of specialist consultants. The Stage A Team Leader will be based at FPCO and be supported by 154 person months of Bangladeshi consultants and 53 person months of Bangladeshi technical support staff. The expatriate team for Stage B will have 24 person months for its Team Leader plus 10 person months of expatriate specialists. Stage B will have no Bangladeshi consultants but will be supported by SPARRSO and FPCO personnel. FPCO will provide a full-time counterpart team, headed by a Superintending Engineer, which will be the nucleus of a GIS Planning Unit within the FPCO.

The teams for Stages A and B have overlapping objectives. To ensure continuity of approach the whole GIS activity will be under the direction of the FAP Resident Manager and Coordinator. The team for Stage A will be user oriented and aim to initiate a distributed GIS capability in Bangladesh, primarily utilizing PC micro-computers. The team for Stage B will be initially concerned with setting up the new NASA specified VAX mini-computer GIS system in SPARRSO. Subsequently, they will ensure that SPARRSO develops the capability to link-up with the distributed GIS PC system initiated in Stage A, and provide user products (e.g. Digital Terrain Model, crop damage models) to FAP participants and the agricultural sector. Both teams will participate in GIS training activities for FPCO personnel, and they will function as a single ISPAN/EWI team to produce specified reports and other outputs.

GIS support to other FAP studies and activities will be coordinated by the FPCO; those to the Agriculture Sector Project (SARPPAM) will be coordinated by the FAP Resident Manager and Coordinator. GIS support operations will be conducted at SPARRSO. Equipment to be furnished to SPARRSO under Stage B funding will be made available for GIS support and production activity at FPCO and to the Ministry of Agriculture.

The GIS Team Leader will maintain coordination with all relevant FAP activities through the FPCO. In addition, the study team will provide technical support for GIS to selected FAP activities as agreed with the FPCO. Supply of timely data and other input from those activities will be the responsibility of the FPCO.

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EASTERN WATERS STUDY
Bangladesh Flood Action Plan: Geographic Information Systems

670B - 9

| CALENDAR YEAR | | 1990 | | | | 1991 | | | | 1992 | | | | TOTAL |
|--|-------------|------|---|---|---|------|---|---|---|------|---|---|---|---------------|
| ACTIVITY | FISCAL YEAR | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | |
| ACTIVITIES: Stage A (Bureau Funded) | | | | | ■ | ■ | ■ | ■ | | | | | | |
| Stage B (Mission Funded) | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| Phase I | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| Phase II | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| Assessment of User Needs | | | | | ■ | | | | | | | | | |
| Assessment of Data Availability and GIS Capabilities | | | | | ■ | | | | | | | | | |
| Define Demonstration and Pilot Projects; Report | | | | | ■ | | | | | | | | | |
| Demonstration Project | | | | | | ■ | | | | | | | | |
| Pilot Projects | | | | | | | ■ | ■ | | | | | | |
| Assessment of Demand and Application for GIS | | | | | | ■ | ■ | | | | | | | |
| Collection of Primary Data | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| Construction of Digital Terrain Model and Other User Products | | | | | | | | | ■ | ■ | ■ | ■ | ■ | |
| Training | | | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | |
| Review program results, write synthesis reports and recommendations for future GIS | | | | | | | | ■ | ■ | ■ | ■ | ■ | ■ | |
| Stage A | | | | | | | ■ | ■ | | | | | | |
| Stage B | | | | | | | | | | | ■ | ■ | ■ | |
| CONSULTATION/DISSEMINATION | | | | | | | | | | | | | | |
| Workshops/Conferences | | | | | | | ■ | | | ■ | | | | |
| Reports: ○ Draft ● Final | | | | | | | | | | | | | | |
| Inception | | | | | ● | | | | | | | | | |
| User Survey Report | | | | | | | ● | | | | | | | |
| Interim | | | | | | | | ○ | ● | | | | | |
| Digital Terrain Model Completion | | | | | | | | | | ○ | | | ● | ● |
| STAFFING: ^a | | | | | | | | | | | | | | Person Months |
| Expatriates | | | | | | | | | | | | | | |
| Phase I - Team Leader | | | | | ■ | ■ | ■ | ■ | | | | | | 12 |
| Water Resources Planning Engineer ^b | | | | | ■ | ■ | ■ | ■ | ■ | ■ | | | | 4 |
| GIS System Specialist | | | | | ■ | ■ | ■ | ■ | ■ | ■ | | | | 4 |
| Information Specialist | | | | | ■ | | ■ | | | | | | | 4 |
| Phase I: Total | | | | | | | | | | | | | | 28 |
| Phase II - Team Leader | | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | 24 |
| Systems Application Specialist | | | | | | ■ | | ■ | ■ | | | | | 3 |
| Systems Information Engineer | | | | | | | ■ | ■ | | | | | | 2 |
| Cartographic/GIS Specialist(s) | | | | | | | ■ | ■ | ■ | | ■ | | | 3 |
| Agriculture/Met. Specialist(s) | | | | | | | ■ | ■ | ■ | | | | | 2 |
| Phase II: Total | | | | | | | | | | | | | | 34 |
| Expatriates: Total | | | | | | | | | | | | | | 62 |
| Bangladeshi: Prof. Staff | | | | | ■ | ■ | ■ | ■ | | | | | | 154 |
| Bangladeshi: Support Staff | | | | | ■ | ■ | ■ | ■ | | | | | | 53 |

Notes:

Two team leaders are needed because each will operate from a different institutional base: Phase I from FPCO, Phase II from SPARSSO; and each phase has differing but overlapping objectives.

The FAP Manager and Coordinator will direct the whole GIS activity and provide input as the Water Resources Planning Engineer, he is funded under Activity 670B-6.

EASTERN WATERS INITIATIVE

Bangladesh (FAP): Flood Proofing Study*

DESCRIPTION:

The Bureau will finance Phase I of this study and the related Flood Response study (Activity 670B-7). These two studies are complementary and between them encompass a study of non-structural and structural flood response and flood proofing in both rural and urban areas. To simplify study design and management, ISPAN/EWI propose to confine the Flood Proofing study to an examination of flood response of people and organizations in municipal and urban areas and for public sector infrastructure throughout the country. The complementary Flood Response study will focus on the rural areas and agricultural communities and individuals.

The overall objectives of this study are to identify and implement effective measures to avoid or reduce the adverse human, infrastructural and economic effects of flooding, particularly in unprotected areas. Phase I studies will examine how individuals, industrialists, local and central government respond to floods in rural towns/municipal areas, and their impact on national infrastructure (roads, rail, power etc.). The measures these entities have adopted to mitigate flooding, and new approaches that may be formulated will be examined, successful measures categorized, a flood-proofing strategy developed, and schemes for pilot-proofing activity in Phase II identified.

During Phase II (to be funded by other, as yet, unidentified donors) flood-proofing measures will be tested in a series of small pilot activities. It is expected that flood-proofing measures successfully tested and demonstrated during Phase II will be adopted by individuals, commercial or industrial firms, local governments and other institutions using private, commercial or institutional funds.

Objectives of the Phase I Studies are to:

- prepare a flood-proofing issues report drawing upon literature review, empirical data and a systematic field survey;
- develop concepts and strategies for flood-proofing studies and activities following a workshop to discuss the flood-proofing issues report;
- identify areas for flood-response pilot implementation studies in each of the countries six regions;
- develop a workplan for the Phase II activities.

SCHEDULE:

This activity will have two phases during which eight tasks will be completed:

Phase I (7 months: October 1990 - April 1991)

Schedule

| | | |
|---------|---|-------------|
| Task 1. | Review existing national and international studies, undertake reconnaissance field surveys, and produce Inception Report. | 10/91-11/91 |
| Task 2. | Design and carry out a systematic survey of flood-proofing measures practiced in Bangladesh. | 11/91-02/92 |
| Task 3. | Compile and analyze data on flood-affected households and commercial/industrial activity. Determine hydrologic and other parameters needed to forecast costs and benefits, estimate effectiveness of selected measures and identify practices for which further study is justified. | 12/91-02/92 |
| Task 4. | Prepare a draft Flood-Proofing Strategies Paper to summarize findings, further data needs and recommendations. | 01/91-02/91 |
| Task 5. | Organize a workshop to review concepts and strategies for flood-proofing studies and activities to be carried out in Phase II. | 03/91-04/91 |

* This is the Bangladesh Flood Action Plan (FAP) Supporting Study #23: Flood Proofing Pilot Study which is partly funded by the Bureau.

| | | |
|---------|---|-------------|
| Task 6. | Identify resources and roles of public and private sector organizations for implementation of measures found to be effective and arrangements for monitoring, evaluation and training activities. | 03/91-04/91 |
| Task 7. | Identify one or more representative flood-prone areas in each of the six regions of Bangladesh in which to carry out pilot studies of flood-proofing in Phase II and plan Phase II operations. | 03/91-04/91 |
| Task 8. | Prepare an Interim Report giving detailed TORs for the pilot activities in Phase II. | 05/91 |

Phase II (56 months: May 1991 - December 1995)

The workplan and Task list for Phase II will be developed in Phase I, Task 8.

INFORMATION DISSEMINATION/PUBLIC PARTICIPATION:

WORKSHOPS. There will be two major workshops to disseminate the results of this study:

| | | <u>Schedule</u> |
|-----|---|--------------------|
| (1) | Workshop to discuss the initial findings given in the Inception Report and relate these to the initial findings of the Flood Response Study (Activity 670B-7). Output will provide focus for the field survey (Task 2). | month 4 01/91 |
| (2) | Workshop to review Flood-Proofing Strategies Paper, and exchange and record ideas on flood-proofing in order to finalize concepts and strategies for flood-proofing studies and activities to be carried out in Phase II. | month 6 03/91 |

There will be intensive discussion with individuals, industrialists, municipal authorities and local government during the survey (Task 2) to determine their flood-proofing ideas and strategies.

REPORTS. Three reports will be produced during Phase I:

| | | | |
|-----|---|------------|----------------------------|
| (1) | Inception Report; | by month 2 | 12/90 |
| (2) | A Flood-Proofing Strategies Paper; | by month 5 | Draft 03/91 Final 04/91 |
| (3) | An Interim Report on recommendations and the TORs for implementation and monitoring of flood-proofing measures. | by month 7 | 04/91 |

STAFFING:

ISPAN/EWI will provide 13 person months of expatriate consultants for the Phase I Studies, and utilize 22 person months of Bangladeshi consultants. The Phase I study will be supervised by a full-time expatriate Team Leader who will report to the FAP Resident Manager and Coordinator.

The study team will receive technical support from the ISPAN/EWI team conducting the Flood Response Study (Activity 670B-7) and will work in close coordination with the FPCO and with consultants or other institutions engaged on other FAP activities, especially for the Flood Forecasting and Early Warning (FAP Activity #10) and Disaster Preparedness (#11) studies. Others include Regional studies (#2-#6); Cyclone Protection Project (#7); FCD/I Agricultural Study (#12); Environmental Study (#16); Fisheries Study (#17); and Compartmentalization Pilot Project (#20).

Australia, CIDA, and SIDA (Rural Sector Employment Project (RESP)) have indicated their wish to be informally involved in this activity.

The senior experts provided through the Advisory Group (Activity 670B-3) and the Panel of Experts (Activity 670B-11) will provide periodic peer review. The Advisory Group will review project outputs, relate them to EWI and the overall FAP, and produce the EWI Synthesis Report.

EASTERN WATERS STUDY

Bangladesh Flood Action Plan: Flood Proofing

670B - 10

| CAREER YEAR | 1990 | | | 1991 | | | | 1992 - 1995 | | | TOTAL | |
|---|------|---|---|------|---|---|---|-------------|---|---|-------|--|
| FISCAL YEAR | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | | |
| ES: Phase I - Design^a Phase II - Implementation^b | | | | ■ | ■ | ■ | | | | | | |
| Available Studies and Reconnaissance Surveys Surveys Issues Report Flood Proofing Strategies Paper Phase I Completion Report | | | ■ | ■ | ■ | ■ | | | | | | |
| DISSEMINATION/DISSEMINATION Seminars/Conferences □ Draft ● Final ● Strategy Paper Flood Proofing Strategy Paper Completion | | | | □ | □ | | | | | | | |
| PERSONNEL: Chief Engineer (Civil Engineer) Resources Planner ^c Term Specialists (Health, Sociology, Anthropology) Total Staff: Prof. Staff Staff: Support Staff ^d | | | ■ | ■ | ■ | | | | | | | Person Months 7 2 4 — 13 22 - |

I is wholly funded by the Bureau.

II will be funded by other donors (Canada, Australia, Sweden (RESP)).

III is funded by FAP Resident Program Manager and Coordinator funded under Activity 670B-6.

IV is provided under Activity 670B-6.

EASTERN WATERS INITIATIVE

India: Flood Forecasting, Preparedness and Proofing

DESCRIPTION:

This activity is funded by the Bureau under EWI I. The EWS identified two areas which will be the focus of EWI activities in India:

- A) Policy Dialogue and Professional Exchange
- B) Research Studies and Research Management

Policy Dialogue and Professional Exchange. The EWS team initiated an important dialogue concerning a number of critical issues within India which the Mission is attempting to continue with the Ministry of Water Resources, the Planning Commission, and associated institutions and centers of some of the research areas identified in the EWS. This dialogue is of paramount importance, for through it the concerned decision makers and institutions may support and endorse necessary analyses and studies and subsequent findings on basin issues. Given the U.S. water resources experience, professional credibility and familiarity with the issues, we have an overwhelming comparative advantage and unique role to play in working with senior officials in each country, backed by limited A.I.D. grant funding, to develop, improve and/or implement critical analyses and studies. Regular visits by special experts such as Rogers, Coleman, Hamilton, Jones, etc. over the next year or two would enable us to move forward on a better understanding of the basin dynamics and development options with the concerned governments and their own institutions and consultants. Such U.S. bilateral professional support and exchange to improve the basin states' own analytical capabilities will be a substantial part of an Eastern Waters Initiative.

Research Studies and Research Management. Research studies and research management will aim in part at identifying and prioritizing needed research studies, identifying research collaborators, and strengthening national capability to design, manage, and carry out research. The principal study areas, as identified in the EWS include:

- (1) Studies of monsoon hydrology to improve understanding of sediment generation transport processes, and the dynamics of floods in the Himalayan region;
- (2) Water balances on the Ganges, Brahmaputra and Meghna river basins;
- (3) Sediment balances in the three major land forms of the region - the mountains, the plains, and the coastal deltas;
- (4) Geology and seismology of the Himalayas as it affects decisions on whether high dams and large storage reservoirs can be built at many otherwise excellent sites in the Himalayas;
- (5) Potential for underground storage of flood waters;
- (6) Rural electrification for tubewells and other uses, including a study of how the large and rather seasonal energy needs of large numbers of additional tubewells of different sized can be met on a national and regional basis;

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EASTERN WATERS INITIATIVE

Bangladesh (FAP): Panel of Experts

DESCRIPTION:

The Panel of Experts will be funded by the Bureau under EWI III. A Bangladesh National Flood Council and an Implementation Committee for the Flood Action Plan (FAP) were established in September 1989 by the Government of Bangladesh (GBD). The Council, headed by President H.M. Ershad and composed of senior members of the GBD, will meet periodically to review progress on the FAP and formulate policies to ensure timely implementation. The Implementation Committee is headed by the Minister of Irrigation, Water Development and Flood Control (MIWDFC) and composed of the Secretary of Irrigation, Secretary of Finance and the Secretary of External Resources Division, it has the responsibility and authority to review and approve the recommendations of the Technical Committee described below, and is vested with full decision making authority to act for GBD in all matters pertaining to the FAP. The Technical Committee's main responsibility during the study phase of the FAP (1990 - 1995) will be to work with the various bilateral and multilateral agencies in the design, financing and supervision of studies and pilot projects. The Technical Committee is assisted by an Panel of Experts (POE) composed of experts (local and foreign) in, for example, the fields of engineering, economics, social sciences, and environmental sciences.

The Panel of Experts (POE) has a core group of experts who attend officially convened meetings every six months in Bangladesh (normally January and June) and ad hoc meetings every quarter. The US is represented on the POE by Dr W.A. Garvey, Director of ISPAN. In addition, specific experts join the POE as needs are foreseen and have included Mr F. Bayley, Chief Engineer/COE, Lower Mississippi. In future meetings, it is envisaged that US experts in the fields of river hydrology, sedimentology, environment, and economics will be supported under this important review role.

The objectives of this activity are to:

- ensure that the US has opportunity to review FAP programs and projects during their formulation so that timely changes in scope or design can be properly carried out;
- ensure the highest possible technical standards are realized in all programs and projects;
- make certain that the FAP planning process is transparent and accountable; and,
- ensure coordination of all bilateral and multilateral donor contributions to the FAP.

SCHEDULE:

US participants on the POE will normally be briefed by the Bureau and the EWI Program Management prior to attending POE meetings. It is envisaged that each POE session will require two weeks of input for each participant. During this period the experts would take part in discussions with GBD officials, Mission staff, and EWI personnel working on EWI studies in the region, as well as making field visits. In addition, some of the experts may visit (normally en route) other countries which have flood plain planning problems similar to those of Bangladesh in order to transfer lessons learned to Bangladesh.

INFORMATION DISSEMINATION/PUBLIC PARTICIPATION:

The primary function of members of the POE is to disseminate ideas and experience gained from their profession. In addition to POE meetings, participants will contribute to the various workshops, seminars and conferences planned under the EWI program.

STAFFING:

Dr W.A. Garvey will be the US expert on the core committee. Other senior experts will be attend POE meetings as needed. Twelve person months of time have been allocated for four experts.

EASTERN WATERS INITIATIVE**Bangladesh: Support for Agricultural Resource Policy,
Planning and Management (SARPPAM)
within the Ministry of Agriculture (MOA)****DESCRIPTION:**

This project is funded under EWI IV utilizing a buy-in to ISPAN from USAID/Dhaka's TRP-II activity. USAID has other water-resources projects in Bangladesh which, though separately financed and managed, will complement and assist this program (particularly activities on the Flood Action Plan). The SARPPAM Project within MOA will be coordinated with these other projects.

The Ministry of Agriculture (MOA) has requested assistance in developing strategies and policies to meet its two FFYP goals:

- (1) to improve the nutritional status of the population; and
- (2) to establish a sustainable agricultural growth path.

Improving nutritional status requires annual growth in output greater than that of the population and diversification to include crops essential to a balanced diet. Major advances in agricultural output will need better and increased volumes of inputs.

Attaining a self-sustaining agricultural system which meets the FFYP nutritional goal requires sound natural-resources management. Increased agricultural water use in the dry season can have adverse impacts on other use which includes potable water supplies, navigation and fisheries; also, flood protection may reduce groundwater recharge essential for much of the dry season irrigation. Increased fertilizer and pesticide use may have unforeseen and adverse environmental impacts. Thus, an integrated agricultural development strategy is imperative.

ISPAN will provide a team that will comprise a resident advisor (COP) on water-resources and agricultural-policy development and short-term consultants on environmental impact assessment, management information systems, geographic-information systems (GIS) and agricultural marketing. The team also will include local professional, technical and administrative support and be capable of operating without significant support from MOA.

The COP will also represent the ISPAN Eastern Waters Initiative (EWI) programs in Bangladesh and the regions (India, Nepal) and coordinate this TA team efforts with those being separately managed under the USAID/ISPAN activities, the Bangladesh Flood Action Plan (FAP). Under this arrangement all of USAID's support to the EWI will be integrated to achieve the USA's goals as articulated in the Eastern Waters Study.

The project will provide policy-level advice and technical support in water resources and agricultural science to strengthen the planning and management capabilities of MOA. The project team will assist MOA to implement a comprehensive agricultural development strategy with increased involvement of the private sector. This will be achieved through (a) enhancing MOA's capability for analyzing and summarizing technical data relating to cropping systems and (b) identifying new data and monitoring needs. In addition, the project will lay the foundation for sectoral and project EIAs in line with AID requirements and recent GOB environmental initiatives.

The project team will assist MOA in building an internal capability in four main areas:

- (a) Upgrade and redefine water-resources data collection, analysis and presentation;
- (b) Develop guidelines and capability to complete environmental assessments of present or proposed agricultural policy and project actions;

- (c) Monitor private sector initiatives and performance, particularly on supply of inputs and services related to water supply; and,
- (d) Advise on land use decisions to improve water management, conservation of soil productivity and environmental protection.

Specific objectives are to develop:

- (a) enhanced technical capability of MOA to analyze existing information and data bases through the use of computer based systems;
- (b) local capability enhanced by transfer of technology through the development of local expertise and on-the-job training;
- (c) a functioning Management Information System to support planning;
- (d) a comprehensive analytical and planning capability to support the continued expansion of groundwater based minor irrigation assisted by GIS;
- (e) an environmental assessment capability to ensure environmentally sound agricultural development;
- (f) policies which reflect greater understanding of how to augment private sector contribution to sustained and diversified agricultural growth; and
- (g) new policies which reflect preliminary identification of agro-processing and agri-business opportunities.

SCHEDULE:

This 18 month activity has 3 phases and 10 tasks.

Phase I (3 months: November 1990 - January 1991)

Task 1. In cooperation with the MOA, Mission and EWI prepare Inception Report including updated and detailed SOW, and schedule. 11/90 - 01/91

Phase II (13 months: February 1991 - February 1992)

Task 2. Provide policy level advice and technical support in water resources, and agricultural science, and marketing to the MOA. 02/91 - 02/92

Task 3. Review data needs for agricultural policy formulation and design system to acquire and process data. 02/91 - 06/91

Task 4. Liaise with FAP/MIS and GIS activities under EWI and SPARRSO to develop data standards and protocols, and for use of data for MOA. 03/91 - 06/91

Task 5. Develop MIS and GIS systems to support agricultural planning. 04/91 - 02/92

Task 6. Provide expert advice to MOA on marketing and privatization aspects of minor irrigation. 02/91 - 02/92

- | | |
|--|---------------|
| Task 7. Review potentials for economic corp diversification in Bangladesh and provide policy guidelines to MOA on this and agricultural marketing. | 07/91 - 02/92 |
| Task 8. Provide training to MOA personnel in the Policy Planning Cell. | 02/91 - 02/92 |
| Phase III (2 months: March 1992 - April 1992) | |
| Task 9. Prepare EWI synthesis report of SARPPAM activities and new policy initiatives and guidelines. | 02/91 - 04/92 |
| Task 10. Prepare Final Report and recommend future activities for EWI. | 02/92 - 03/92 |

INFORMATION DISSEMINATION/PUBLIC PARTICIPATION:

WORKSHOPS. Three workshops are planned. These workshops will be coordinated with the workshops under FAP activities to insure that the EWI activities and findings are disseminated as a coherent and integral program.

- | | |
|---|-------|
| (1) Workshop to discuss private sector initiatives in minor irrigation | 09/91 |
| (2) Workshop to disseminate MIS and GIS system developed within the MOA | 12/91 |
| (3) Workshop to discuss agricultural marketing strategies the light of enhanced private sector development in minor irrigation and economic crop diversification potentials | 02/92 |

In addition to these workshops project personnel will make a substantial contribution to the three EWI conferences and participate in local and regional meetings.

REPORTS. These will be produced according to the schedule:

- | | |
|---|---------------------------------|
| (1) Inception Report and detailed work plan | 02/92 |
| (2) MIS Report including results of data surveys | 06/92 |
| (3) GIS Report | 10/92 |
| (4) Various reports and papers on major project findings - to be detailed in Inception Report | as needed |
| (5) Project Evaluation Report | Draft 1/92 Final 3/92 |
| (6) Final Report including recommendations for future activities | 4/92 |
| (7) Semi-annual progress reports follow-on studies. | from 03/92 by month 17 02/92 |

STAFFING:

ISPAN/EWI will provide 31.5 person months of U.S. consultation and advice on water-resources and agricultural policy. Also provided are 149 person months of Bangladeshi professional personnel; 63 person months of support staff (technical and administrative); and needed computers, vehicles and office equipment.

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The Project Manager (COP) will work with Bangladesh's Project Planning Cell (PPC) and the Mission to establish priorities and develop and implement agreed work plans. As representative of the EWI in Bangladesh and the region (India, Nepal) the COP will undertake regional visits as necessary, and coordinate EWI and FAP activities in Bangladesh.

DRAFT

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- (7) River mechanics, including detailed hydrographic analysis of the dynamic and shifting regional rivers as a basis for engineering pre-feasibility studies of projects such as bridges and embankments;
- (8) Options for interbasin transfer of water to augment low flows on the Ganges River;
- (9) Research in support of flood proofing studies: studies by social scientists, cropping systems specialists, economists, and others would investigate how people in the rural areas live with the floods; what kinds of safety measures they undertake at the family and community level before and during a flood; how crop systems are adjusted to flood expectations;
- (10) Studies of the ecology and natural resource base of the mountains, plains, and coastal delta areas of the Himalayan watershed, the linkages and interdependent relationships between these systems, and the critical environmental issues affecting sustainable economic development in these watersheds.

Initial discussions by the EWI Program Manager in February, 1990, with the Government of India's (GOI) Central Water Commission (River Management), Ministry of Water Resources (Joint Rivers Commission), Brahmaputra River Board, Central Water and Power Research Station and The Ford Foundation indicated that GOI were interested in study areas (1), (4), (7) and (9) listed above. Further discussion will be required to develop terms of reference for these studies. GOI also requested that the EWI consider a joint venture with the Government of Japan to update India's flood forecasting/warning system for the Ganges and Brahmaputra river basins.

SCHEDULE:

This activity will have three phases during which five tasks will be completed:

| | | <u>Schedule</u> |
|---|---|-----------------|
| Phase I (10 months: January 1990 - October 1990) | | |
| Task 1. | Meet with GOI officials and NGOs to determine scope of EWI Program in India. | 01/90-10/90 |
| Task 2. | Detail Terms of Reference for studies. | 10/90-11/90 |
| Phase II (14 months: November 1990 - December 1991) | | |
| Task 3. | Identify U.S. professionals for Indian activities, mobilize to initiate activities in India, and undertake field work. | 11/90-12/91 |
| Task 4. | Advisory Group to review Indian studies and advise needed policy changes, new initiatives and improvements to study program. | 04/91-12/91 |
| Phase III (3 months: January 1992 - March 1992) | | |
| Task 5. | Prepare and present Synthesis Report of Indian activities under EWI with recommendations for policy initiatives and improved professional exchange. | 01/92-03/92 |

INFORMATION DISSEMINATION/PUBLIC PARTICIPATION:

Workshops, informal conferences and seminars will be held periodically to disseminate ideas and findings developed under the EWI India program. Specific events will be identified under Tasks 2 and 4 above.

REPORTS. Expatriate and Indian consultants will prepare reports describing their activities in India at the end of each specific input. The EWI Advisory Group will produce a Synthesis Report under Activity 670B-3 by April 1992.

STAFFING:

ISPAN/EWI will field 11 person months of expatriate specialists and hire 20 person months of senior Indian consultants. An allowance for 12 visits to India has been made, as well as provision for a PC computer and in-country transport.

EASTERN WATERS INITIATIVE

Nepal: Policy Dialogue and River Basin Research

DESCRIPTION:

This activity is funded by the Bureau under EWI I. The EWS identified two areas for EWI activities:

- A) Policy Dialogue and Professional Exchange
- B) River Basin Hydrological Research

Policy Dialogue and Professional Exchange. Policy dialogue and professional exchange will aim in part at identifying and prioritizing needed research studies, identifying research collaborators, and strengthening national capability to design, manage, and carry out research.

River Basin Hydrological Research. The principal areas, as identified in the EWS include:

- (1) Empirical studies of the effects of afforestation, deforestation, and agricultural land use on the basic hydrologic process of Himalayan river basins to improve understanding and estimates of sediment and water yield;
- (2) Field studies of agro-economic, socio-economic, and agro-ecological factors in the relationship of settlement and land use to watershed degradation and conservation in the Himalaya river basins, and sustainable economic development in the upper watershed areas.

The objectives are to:

- enhance understanding of the linkages between the Himalayan river basin hydrology and the hydrology of the Ganges floodplain in India;
- identify important socio-ecological issues affecting land use and degradation;
- formulate policy and guidelines for sustainable economic development in the upper watershed areas while minimizing impacts on lower riparians.

SCHEDULE:

This activity will have three phases during which five tasks will be completed:

Phase I (10 months: January 1990 - October 1990)

Schedule

- | | | |
|---------|---|-------------|
| Task 1. | Meet with Nepal Government officials and NGOs to determine scope of EWI Program in Nepal. | 01/90-10/90 |
| Task 2. | Detail Terms of Reference for studies. | 10/90-11/90 |

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Phase II (14 months: November 1990 - December 1991)

Schedule

- | | | |
|---------|---|-------------|
| Task 3. | Identify U.S. professionals for Nepal activities, mobilize to initiate activities in Nepal, and undertake field work. | 11/90-12/91 |
| Task 4. | Advisory Group to review Nepal studies and advise needed policy changes, new initiatives and improvements to study program. | 04/91-12/91 |

Phase III (3 months: January 1992 - March 1992)

- | | | |
|---------|--|-------------|
| Task 5. | Prepare and present Synthesis Report of Nepal activities under EWI with recommendations for policy initiatives and improved professional exchange. | 01/92-03/92 |
|---------|--|-------------|

INFORMATION DISSEMINATION/PUBLIC PARTICIPATION:

Workshops, informal conferences and seminars will be held periodically to disseminate ideas and findings developed under the EWI Nepal program. Specific events will be identified under Tasks 2 and 4 above.

REPORTS. Expatriate and Nepalese consultants will prepare reports describing their activities in Nepal at the end of each specific input. The EWI Advisory Group will produce a Synthesis Report under Activity 670B-3 by April 1992.

STAFFING:

ISPAN/EWI will field four person months of expatriate specialists in six visits to Nepal. Local Nepalese consultants will provide four person months.

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