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DEVELOPMENT OF SUSTAINABLE AQUACULTURE PROJECT

**A project implemented by the
WorldFish Center**

**Funded by the
U.S. Agency for International Development (USAID)
(Cooperative Agreement 388-A-00-00-00068-00)**

**PROGRESS REPORT
(1 July 2003 - 30 September 2003)**

Prepared by

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INTRODUCTION

The Development of Sustainable Aquaculture Project (DSAP) was authorized by USAID under the Cooperative Agreement # 388-A-00-00-00068-00 on 28 June 2000. This technical progress report covers activities for the three months of the project, 1 July 2003 through 30 September 2003. Financial reporting for the Project is handled separately from the WorldFish Center (previously called ICLARM-International Center for Aquatic Resource Management) headquarters in Penang, Malaysia.

The main thrust of the Development of Sustainable Aquaculture Project is to sponsor on-farm aquaculture production demonstrations implemented through co-operating NGO partners. These demonstrations are expected to show farmers and their neighbors the profitability of managed aquaculture systems as small business operations. Both small ponds and integrated rice and fish systems, based on research-proven production results, are the target of these demonstrations. The Project also has a research component directed to understanding and exploring additional production options, improving the technology transfer process and monitoring the impact of the adopted aquaculture practices.

This quarterly technical progress report covers (i) the organization of rallies/farmer days and cross-visits, (ii) the performance assessment of associate-partner NGOs, (iii) the collection of data for the *ex post* impact assessment, (iv) the training of partner NGO and associate partner NGO staff and (v) participation in the America Week 2003.

Details about the support of on-farm demonstrations, research, training and administrative actions are presented in the respective sections of this report.

DEMONSTRATIONS AND NGO ACTIVITIES

Currently the Project is collaborating with 35 partner NGOs responsible for the implementation of the 2003/04 aquaculture dissemination program. As per project guidelines the partner NGOs are providing extension services to the cooperating demonstration households organized in demonstration farmer groups (DFG) for a period of three years. Therefore during the 2003/04 aquaculture season support is provided to the newly identified 2003/04 demonstrations farmers/households as well as the carried over DFGs of 2001/02 and 2002/03, whose members are presently receiving extension services in the third year (i.e. phase-out year) and in the second year, respectively.

In total 30,706 participating farmers/households are receiving extension services of which 11,925 new demonstrations, 6,614 carried over demos selected in 2002/03, 4,701 in 2001/02 as well as 7,466 new DFG members. These new group members are considered as secondary adopters who became member of the aquaculture group to learn more from their fellow farmers and to attend the extension sessions facilitated by the NGO field staff. The cooperating demonstration farmers/households are organized in 2,657 DFGs of which 1,447 were formed this year. The total aquaculture production surface is estimated to be around 4,000 ha (cf. Attachment 1). Attachments 2, 3 and 4 illustrate the geographical distribution of the supported aquaculture demonstrations of the 2003/04 extension program partner NGO-wise, the same number-wise and the distribution of partner NGO staff according to WorldFish-DSAP field liaison office respectively.

In the previous progress report (April – June 2003) we have reported the results of the household or couple approach, which was adopted by 27 out of 35 partner-NGOs and which resulted in the selection of 73.3 % couples of the total number of new demonstrators. Awaiting a detailed analysis of the couple approach, we can report that female participation in the foundation training was high, nearly all invited female farmers attended this two-day

training. However, female participation was less in the two follow-up training and group sessions (about one third of invited women). The lower female participation in the follow-up training and group sessions is essentially due to insufficient training of the NGO field staff and therefore the female farmers were not always invited and/or encouraged to participate. Special attention will be given to this issue during the next Training-of-Trainer follow-up session as well as during the forthcoming annual evaluation workshop scheduled for October 2003.

As part of the learning process for demonstration households and in particular to create awareness for less known technologies as nursing and rice-cum-fish practices, 34 out of 35 partners arranged for farmer cross-visits this year. To achieve this goal most cross-visits focused on visiting fingerling nurseries and rice-cum-fish demonstration farmers. One to two leaders of each Demonstration Farmer Group were invited and each cross-visit comprised 12 to 15 visitors. For the period from July to September 2003, 81 cross-visits were organized allowing 1,204 demo farmers of which 19 per cent were women to visit fellow demonstration farmers. About 6,000 farmers are targeted for the 2003/04 culture season to participate in the cross-visit program.

As per approved 2003 work plans the cooperating partner NGOs are committed to conduct 739 rallies or farmer field days throughout the 2003/04 aquaculture season. This year most partners opted to increase the number of rallies from two to three per extension worker. During the reporting period 141 rallies were organized allowing the promotion of fish and shrimp farming among 4,449 neighboring farmers of which 35 per cent were women. Most of the remaining rallies are scheduled for the next quarter (Oct.-Dec. 2003) and some for the first quarter of 2004.

To create awareness for integrated agriculture and aquaculture (IAA) as well as to promote these practices the project, in collaboration with the Bangladesh Fisheries Research Institute (BFRI), has adapted the WorldFish IAA poster to the situation and context of rural Bangladesh. Ten thousand (10,000) copies of this poster, showing some organic nutrient flows among on-farm production sub systems, were distributed to partner and associate-partner NGOs, BFRI as well as the Department of Fisheries (DOF).

Support to partner NGOs was continued as usual during the reporting period, i.e. through on-the-job training of NGO staff, frequent field visits including rallies/farmer field days and cross-visits, attending partner NGOs' extension meetings and national/regional coordination meetings. Currently all partner NGOs have completed this year's first refresher training and initiated the second one for "old" and "new" farmers, which will be terminated by the next quarter. As discussed during the training sessions as well as the group meetings, the participating households/farmers are presently following up the aquaculture production emphasizing proper fertilization and complementary feeding practices and the promotion of the use of the pond record books for adequate monitoring of the demonstration.

Regular regional coordination meetings (RCM) and national coordination meetings (NCM) were organized as usual. From April 2003 onward these meetings were organized with the active participation of the partner NGOs including the preparation of the draft program, distribution of invitations, presiding over the meeting and preparation and distribution of the meeting minutes.

During the reporting quarter, the field-based project staff conducted the annual performance assessment of the associate-partner NGOs using a prescribed questionnaire similar to the one used for the partner NGOs. The results showed that 4% have an aquaculture demonstration program rated excellent, 34% good, 36% satisfactory and 26% did not implement any demonstration. The assessment criteria included quality of the demonstrations, farmer

training, field visits, support provided by the NGO management and reporting. The regular regional coordination meetings allowing the coordination of field activities, exchange of experiences and lessons learnt were rated: 20% very useful, 31% useful, 31% to some extent useful and 18% had no opinion. It should be mentioned of the associate-partner NGOs, that 45% confirmed full commitment to the WorldFish-DSAP supported aquaculture program, 28% confirmed commitment and 27% did not confirm their commitment.

Following the performance assessment, 19 (26%) out of 74 associate-partner NGOs were put on hold and the project has confirmed the partnership with 55 (74%) associate-partner NGOs. The program for the remaining months of the 2003/04 production season will emphasize the improvement of the quality of the NGO extension programs.

Funds for the third quarter were released to all partner-NGOs of the 2003/04 extension program. Full details of the status of funds release are provided in attachment 5.

RESEARCH

Impact assessment of adopted aquaculture practices

Year 2000-2001 data: The report on the pond record book data 2000-2001, published as a working paper 2002/9 of the WorldFish Center Bangladesh Office, was finalized and distributed.

Year 2001-2002 data: The pond record book data for the aquaculture year 2001-2002 have been analyzed and draft results were obtained. The report is under preparation and is expected to be completed by October 2003.

Year 2001-2002 data: Economic Impact Assessment: The data set comprises two technologies namely, carp-golda polyculture and carp polyculture representing over 90% of the implemented demonstrations. It includes also data of a control group for making comparisons. Analysis of these data has been completed. Results are under review for verification and revalidation. Report preparation will be completed by the end of the next quarter.

Year 2002-2003 data: The pond record book data for the aquaculture year 2002-2003, generated by the partner NGOs as part of monitoring their aquaculture program and the same data of demonstrations supported by associate-partner NGOs, generated by part-time field investigators, were analyzed and some results were used to calculate and/or estimate USAID indicators for FY2003. Results are under review for verification and revalidation. Report preparation will be completed by the end of the next quarter.

Ex post impact assessment 2000-2001: The farmers involved with the program demonstrated fish culture during the 2000-2001 aquaculture season under the actual (DSAP) and previous project (RDSAP) overlapping program. As per impact assessment strategy of the project, these farmers are supposed to be revisited after a pause of two years allowing them to work independently with fish culture (cf. previous progress report). This revisit is for the purpose of assessing the impact of one-year extension support on production, income and other livelihood aspects two years after completion of the extension services. With this in view necessary preparations for the impact assessment were made in this reporting period including designing questionnaires, area selection, and random sampling. Nine upazilas (i.e. Bogra Sadar, Kotiadi, Monohordi, Phulpur, Magura Sadar, Mohammadpur, Salika, Sathia and Jessore Sadar) covering three agro-ecological zones, representing about 50% of the 2000-2001 demo farmers, were selected for this study.

A total of 260 farmers, of the 2000-2001 pond book survey, were selected for the impact assessment study. Data collection, by 13 temporarily employed field enumerators, took one month (July 12-August 12, 2003). The survey also included one focused group discussion (FGD) in each of the 108 villages from which sample farmers were chosen. The FGDs were conducted to cross-check data and to collect complementary data regarding the community and the intervention(s) by different extension project(s)/service(s). Data entry is in progress and data verification, and analysis is expected to be completed by the end of the fourth quarter.

To assess the impact of the demonstration farmers on neighbors (farmer-to-farmer dissemination), a second data set comprising non-demonstration farmers having ponds, and living in the same villages is in progress. A two way stratified random sample of 47 villages was identified taking into account the number of aquaculture extension interventions other than the RDSAP/DSAP (zero and one or more) for each of the three agro-ecological zones (Bogra, Mymensingh and Jessore). After completion of listing an inventory of non-demo fish farmers in each village, data will be collected from a random sample of 10% of the non-demonstration farmers to make comparisons to isolate the impacts. A total of 495 farmers were selected. Data collection, scheduled for nearly two months, commenced mid September.

Data collected from the baseline study of the of the long-term impact assessment will be used as the control group, i.e. farmers living in villages where to this date technology dissemination project(s) have not been in operation.

Long-term Impact Monitoring (RESTORE): Collection of baseline information from the selected farmers for the period May 2002 – April 2003 (dry and wet season) has been completed. The collected data have been verified and are in the process of entry into the computer. The analysis and reporting will be completed by the end of next quarter. Data collecting for the aquaculture year 2003-2004 for the both participating and control farmers is on-going.

Supplementary studies: Supplementary studies presently include consumption and livelihood surveys. The consumption survey has been commissioned in the previous quarter and monitoring exercises are on-going. Monthly data, compiled by the Research Assistants (M&E) from the registers provided to the participating and control farmers, are being sent to the Dhaka office regularly.

Collaborative Research with BFRI

Following approval of the TAPP for collaborative research between BFRI and the WorldFish Center, the proposed research studies are proceeding smoothly at the BFRI with their scientists. Major research achievements of the six implemented programs during the last governmental fiscal year (July 2002 – June 2003) are provided in attachment 6.

Research grants to Universities

During the quarter, two research grants have been awarded. The first one is a research project on geographical information systems (GIS) in aquaculture awarded to Dr. M.A. Salam of the Bangladesh Agricultural University, Mymensingh with a funding of Taka 267,000 for a period of one year from September 2003 through August 2004. The second grant is a research project on livelihood assessment of fish seed traders awarded to Mr. Mahmud Hasan, from Dhaka University with an authorized funding of Taka 244,400 for a period of August 2003 to February 2004. The latter is a complementary grant to Hasan's

PhD study at the Asian Institute for Technology (AIT) in Bangkok sponsored by DFID funded Support for University Fisheries Education and Research (SUFER).

The status of research grants awarded so far is presented in attachment 7. Altogether 18 small research grants were awarded, 8 were completed and 10 are ongoing.

TRAINING

During the period from 1 July to 30 September 2003 the following training courses were organized according to the annual training plans (cf. work plans FY2003):

- Remaining six batches of a 4-day refresher training course on nursery practices and group dynamics for partner NGOs, initiated in June 2003, were organized from 7 to 24 July in Bogra, Mymensingh and Comilla (2 batches simultaneously). This represented the second, third and fifth refresher training course for staff recruited in 2003, 2002 and 2001 respectively. A total of 125 Field Assistants and 18 Program Coordinators from 21 partner NGOs attended these refresher courses facilitated by local consultants.
- The same 4-day refresher training course on nursery practices and group dynamics was organized for associate-partner NGOs from 7 to 25 September in Jessore (1 batch), Rajshahi (1 batch) and Mymensingh (2 batches simultaneously). This represented the second and third refresher-training course for staff recruited in 2002 and 2001 respectively. A total of 76 extension workers from 46 associate-partner NGOs attended these refresher courses facilitated by local consultants;
- The project participated in and co-financed another Imam (Islamic clerics) training program. This two-day program, which is part of the 45-day foundation training organized by the Bangladesh Islamic Foundation, comprised one classroom presentation followed by a one-day field visit the next day (two batches). A total of 101 Imams attended the program;
- A 3-day training course on participatory approaches for senior managers of partner NGOs was organized from 23 to 25 August (1st batch) and from 29 September to 1 October (2nd batch) in Dhaka. A total of 24 senior staff members of 20 partner NGOs attended the course. The course was designed to provide basic knowledge and skills on participatory approaches allowing them to supervise and support adequately their field workers and improve the quality of their extension programs;
- A one-day field visit to several small-scale carp hatcheries in Jessore was organized on 25 August. Representatives of the 11 partner NGOs that participated in the 3-day theoretical training for hatchery owners were invited and 15 NGO workers (senior managers and program officers) participated in the field trip;
- Four batches of a 3-day refresher training course on monitoring and evaluation for partner NGOs were organized from 7 to 15 September in Gazipur and Jessore (2 batches simultaneously). This course emphasized analysis and reporting of monitoring data collected following the introduction of a monitoring and evaluation program by all partner NGOs. A total of 63 NGO staff members (senior staff, program coordinators, or field assistants) from 35 partner NGOs attended this practically-oriented refresher course.

ADMINISTRATION

The list of project personnel as of 30 September 2003 is attached (Cf. Attachment 8). The contract of Mr. Idris Ali was not extended. The vacant messenger position in the Dhaka office will be taken over in October 2003 by Mr. Tapan Chandra Sarker, who held the same

position in Mymensingh. The present contract of the Office Manager, ending 12 October 2003, will not be renewed. Therefor the recruitment process of a new Office Manager was initiated. The job vacancy was advertised and interviews with suitable candidates are scheduled for October 2003.

The project, along with Projukti Peeth (PP), partner NGO, organized a booth at the America Week from 14-16 September in Sylhet displaying project activities and outcomes. During this event the project staff had the opportunity to discuss project activities with many visitors as well as to meet with officials from the American Embassy and the United States Agency for International Development (USAID) and colleagues from different USAID sponsored programs/projects.

The usual assortment of meetings, visitors and field visits was attended during the period 1 July to 30 September 2003. The most important were:

1. Dr. Md. Ferdous Alam, Research Coordinator, attended the annual research review workshop organized by the Bangladesh Fisheries Research Institute (BFRI) at Mymensingh, from 30 and 31 July 2003;
2. Dr. Md. Ferdous Alam, Research Coordinator, presented a keynote paper at a seminar on poverty alleviation and fisheries organized by Department of Fisheries and Fourth Fisheries Program on 13 August 2003;
3. Mr. Johannes Janssen, Project Leader and Ms. Israt Zahura, Research Associate (training), participated in the Technology Fair organized by the Bangladesh Fisheries Research Institute (BFRI) at BFRI, Mymensingh, on 14 August 2003;
4. Mr. Johannes Janssen, Project Leader, participated in the Science Week organized by WorldFish Center headquarters at Equatorial Hotel, Penang, Malaysia from 25 to 29 August 2003. The program encompassed a three-day workshop followed by a two-day program retreat. The following issues were presented and discussed at the workshop: Research and research support at the WorldFish Center; Assessing the impact of international agricultural research center (IARC) programs and modalities for their impact; Operationalizing the impact pathway paradigm in WorldFish; and Research prioritization at WorldFish. The program retreats focused on "State of program and divisions";
5. Mr. Johannes Janssen, Project Leader attended a one-day workshop on the CABI Aquaculture Compendium jointly organized by the DFID supported Support for University Fisheries Education and Research (SUFER) project and CAB International at BRAC Center Mohakhali, Dhaka on 31 August 2003.

ATTACHMENTS

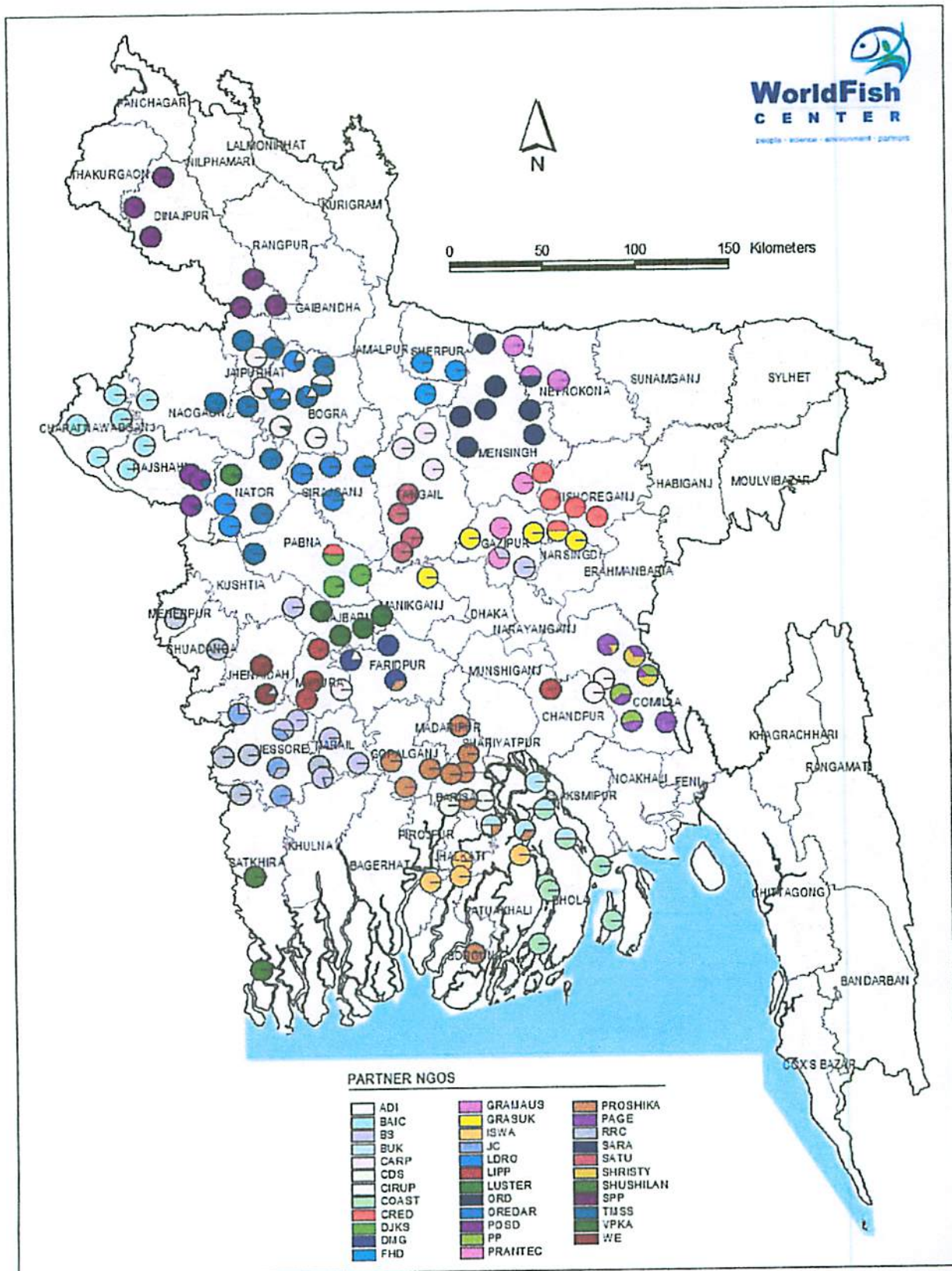
- Attachment 1** **Some key information in respect to the 2003/04 extension program**
- Attachment 2** **Geographical distribution of aquaculture demonstrations supported by the WorldFish-NGO aquaculture extension effort 2002/03 (NGO-wise)**
- Attachment 3** **Geographical distribution of aquaculture demonstrations supported by WorldFish-NGO aquaculture extension effort 2002/03 (number-wise)**
- Attachment 4** **Status of partner NGO staff according (2003/04) to WorldFish - DSAP filed liaison office**
- Attachment 5** **Status of 2003 budgets and funds release to partner NGOs as of 30 September 2003**
- Attachment 6** **Progress of collaborative research program with BFRI**
- Attachment 7** **Status of research projects with the Universities as of 30 September 2003**
- Attachment 8** **USAID-funded staff list as of 30 June 2003**

Attachment 1 Some key information in respect to the 2003/04 extension program

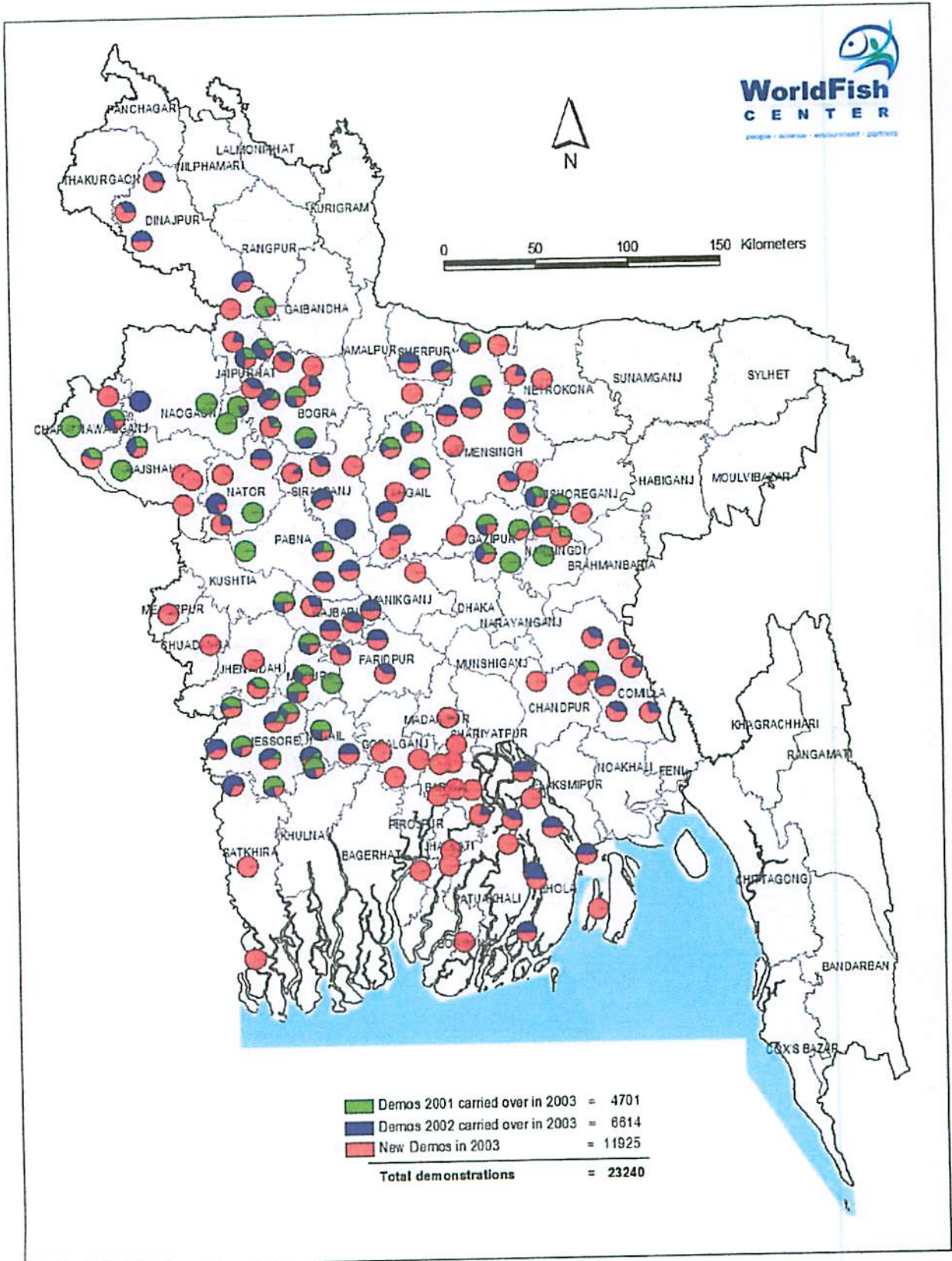
	2001/02	2002/03	2003/04	Total
Demonstration Farmer Groups (DFG)	342	868	1,447	2,657
Demonstration	4,701	6,614	11,925	23,240
Secondary demonstration	1,034	6,432	-	7,466
Total demonstrations ¹	5,735	13,046	11,925	30,706
Average pond/plot size (ha)	0.116	0.134	0.131	0.129
Surface area (ha)	665	1,748	1,563	3,977

¹ new DFG members who joined the group in second and third year of extension support

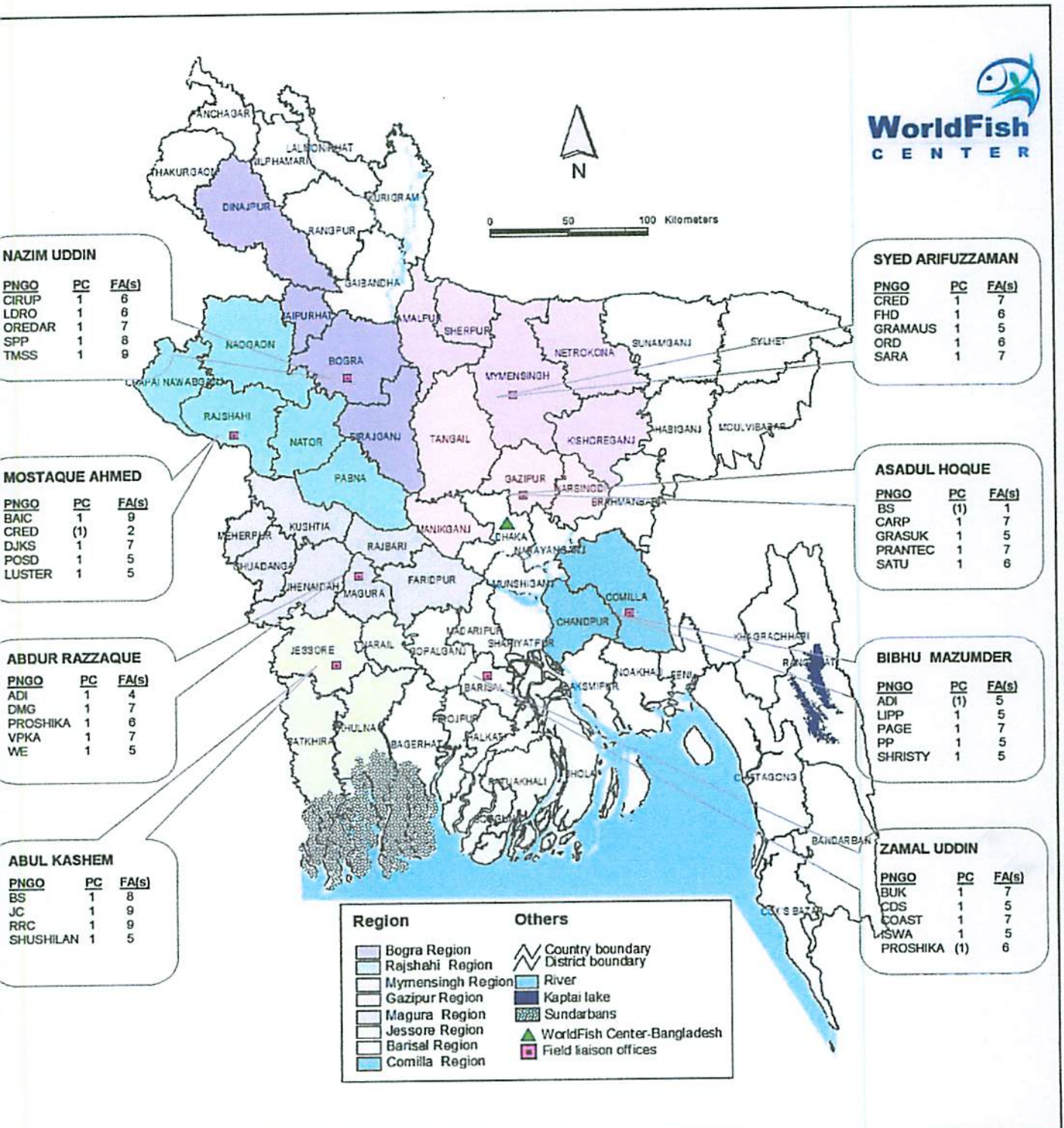
Attachment 2 Geographical distribution of aquaculture demonstrations supported by WorldFish-NGO extension effort 2003/04 (NGO-wise)



Attachment 3 Geographical distribution of aquaculture demonstrations supported by WorldFish -NGO aquaculture extension effort 2003/04 (number-wise)



Attachment 4 Status of partner NGO staff (2003/04) according to WorldFish – DSAP field liaison office



Sl. No.	NGO	No of planned pond/plot	approved expenditure		projected expenditure		US dollar = 57.83 Taka	(September 2003)
			Total (No./Tk)	Total (US\$)	total	Worldfish		
1	ADI	450	2,133,008	1,684,641	-8,392	654,552	549,730	235,188
2	BAIC	450	2,316,206	1,801,222	53,742	621,564	622,606	235,482
3	BS	450	2,167,232	1,706,420	53,752	597,853	584,779	212,725
4	BUK	350	1,056,000	672,000	1,174	267,626	119,063	125,230
5	CARP	350	1,793,730	1,396,010	-32,988	906,991	155,775	133,579
6	CDS (Chandradip)	250	654,527	505,771		202,309	42,412	142,722
7	CIRUF	300	1,611,692	1,243,804	12,174	448,777	429,542	158,136
8	COAST trust	350	1,307,763	832,213	24,651	308,234	112,262	189,579
9	CRED	450	2,230,065	1,746,405	31,797	629,804	611,907	217,061
10	DJKS	350	1,120,196	712,852	54,712	230,429	148,670	102,377
11	DMG	300	1,161,188	738,938	79,854	188,799	196,103	150,945
12	FHD	350	1,611,670	1,243,790	105,891	355,057	425,763	357,079
13	Gramaus	250	1,209,610	1,048,335		387,084	281,975	180,377
14	GRASUK	250	761,503	588,434		235,374	0	187,084
15	ISWA	250	600,215	463,803	185,521	33,044	97,865	147,373
16	JC	450	2,093,328	1,659,390	28,142	611,706	577,779	206,841
17	LDRO	300	1,487,676	1,164,885	-118,474	559,695	421,573	302,091
18	LIPP	250	635,859	491,346		196,538	32,784	155,782
19	LUSTRE	250	637,258	492,426		196,971	54,871	130,675
20	ORD	300	1,618,820	1,248,340	-2,777	464,862	425,984	160,294
21	OREDAR	350	1,156,771	736,127	12,639	281,811	147,099	136,083
22	PAGE	350	1,026,630	653,310	119,284	142,040	152,371	131,067
23	POSD	250	637,588	492,681		197,073	54,761	131,849
24	PP	250	828,300	527,100	66,185	144,655	116,280	111,883
25	PRANTEC	350	1,865,644	1,441,773	-10,639	546,082	538,937	152,155
26	Proshika	600	2,337,362	1,942,507		635,627	376,837	930,043
27	RRC	450	2,107,239	1,668,243	-36,027	678,087	599,113	182,777
28	SARA	350	1,085,920	691,040	96,678	179,738	130,805	166,038
29	SATU	300	1,579,110	1,223,070	101,069	354,699	413,784	161,221
30	Shristy	250	569,737	440,252		176,101	22,295	148,378
31	SHUSHILAN	250	613,250	473,875		189,550	0	134,240
32	SPP	400	2,054,443	1,598,276	37,213	562,356	573,598	181,798
33	TMSS	450	2,464,310	1,895,470	-25,763	724,630	635,405	217,308
34	VPKA	350	1,037,828	660,436	86,504	177,670	151,061	127,607
35	Welfare	250	692,918	535,436		214,175	74,395	145,923
	Total (No./Tk)	11,900	48,264,596	36,420,621	730,401	13,454,040	9,813,363	6,788,989
	Total (US\$)		834,594	629,788	12,630	232,648	169,693	117,396
								100,848
								113,968
								117,396

Attachment 6 Progress of collaborative research program with BFRI (as of 30 September 2003)

• Refinement of aquaculture technologies through NGOs

For the fulfillment of the objectives, two local NGOs i.e. NICHATA and JNDP at Muktagacha upazila, Mymensingh were selected for refinement of two technologies such as “Integrated rice fish farming and improved carp nursery management”. In integrated rice-fish farming, a fish production of 260 to 276 kg/ha (i.e. Rajpunti) was observed in boro season with in 3 months culture period. While in improved carp nursery management, the survival rate rohu and catla was found to be 62-68% and 65-70%, respectively in single stage condition.

• Culture potentials of Small indigenous fish species, bata (*Labeo bata*) in semi-intensive culture system

Semi-intensive culture of carps with small fish bata was under taken for the period of 6 months in on-farm management. A fish production of 2,074-2,466 kg/ha in six months was achieved. The contribution of bata in total production was 10-14%.

• Carp brood stock development and minimization of inbreeding depression problems in hatcheries

Experiments were conducted in a number of hatcheries in Mymensingh and Jessore. The selected ponds of hatcheries were prepared and stocked with improved rohu (*Labeo rohita*) at a density of 7,500/ha in May 2003. Evaluation of growth performances between improved rohu stocked and respective hatchery stock is being continued until December 2003. Thereafter, reproductive performances of the fish will be evaluated from during the coming breeding season (March to June 2004).

• Low-cost agro-based fish feed trials on carp and cat fish in the field condition

This trial was conducted in farmer's pond for the period of 7 months during March-September 2003 with rohu, catla, mrigal and silver carp at a density 15,000/ha. Two experimental diets each consisting of 22% protein with locally available ingredients that were tested in on-farm condition. After 7 months of culture period, it was observed that the best growth in weight and survival of experimental fish was significantly higher ($P < 0.05$) in formulated feeds (ie. fish meal 5%; rice bran 50%, mustard oilcake 10%, soybean cake 26%, wheat flower 2%, molasses 6%, vitamin premix 1% where crude protein content was kept 22%) in comparison to traditional feeds (ie. rice bran 60%, mustard oilcake 40%).

• Factors affecting adoption of polyculture technology in some selected areas of Bangladesh

Survey conducted during December 2002 to May 2003 in six villages each at Mymensingh, Bogra and Norshingdi to identify the socio-economic characteristics of the adopters of polyculture and also to the changes taken place to adopt technology. Both quantitative and qualitative approaches were followed and analyses were done accordingly. After analyses, it was observed that in Mymensingh, 83% respondents were using the polyculture technology where as in Bogra and Norshingdi it was only 17 and 27%, respectively. The guidelines were partially followed by farmers as per recommendations given by BFRI. However, technology user farmers earned much higher profit than those of non-user farmers. In technology user,

returns per taka invested in polyculture were Tk.2.92 while it was Tk.1.41 for non-technology user.

- **Indigenous catfish culture in ponds**

Growth trials on indigenous catfish culture in farmer's pond were attempted. A total of 8 farmers from Mymensingh and Jessore areas. Among 8 selected farmers catfish seeds were stocked in 5 farmer's ponds (4 from Jessore and 1 from Mymensingh) during July, 2003. Monthly sampling was carried out in those experimental ponds and average length and weight of 3rd sampling were recorded 15.4 cm and 59 g respectively. The experiment is in progress and final harvesting of fish will be made in April 2004. Under this program a total 15 farmers (including the 8 associated farmers) were also trained in view of improving their knowledge on catfish culture practices.

Attachment 7 Status of research projects with the Universities as of 30 September 2003

Grant No	Name of the Project	Principal Investigator Name and Address	Project tenure	Existing status	Funds status
01	Feasibility of early shrimp farming with over wintered Golda (<i>Macrobrachium rosenbergii</i>) juveniles	Dr. Mahmudul Karim, Shrimp Culture Specialist, House No.16, Road No. 20, Sector No. 4, Uttara Model Town, Dhaka Bangladesh E-mail: dmkarim@bdcom.com	One year (October 2000 - May 2001)	Completed and final report available	Approved: Tk. 235,000 Disbursed: Tk. 162,527
02	Improved handling and preservation of golda <i>Macrobrachium rosenbergii</i> for producing safe and wholesome product	Drs. Md. Kamal and Md. Nazrul Islam, Professors, Department of Fisheries Technology, Bangladesh Agricultural University, Mymensingh., Bangladesh Tel: (091) 55695-97/2359 E-mail: kamal@royalten.net	One year (April 2001 - March 2002)	Completed and final report available	Approved: Tk. 250,000 Disbursed: Tk. 250,000
03	Cost-profit analysis and market testing of value-added product from silver carp and involvement of rural low income people in the production and marketing of value added product	Dr. Nowsad Alam, Professor, Department of Fisheries Technology, Bangladesh Agricultural University, Mymensingh, Bangladesh Email: nowsad@royalten.net	One year (November 2001 - October 2002)	Completed and final report available	Approved: Tk. 250,000 Disbursed: Tk. 200,000
04	Development of an appropriate technology on <i>Azolla</i> based rice-fish farming	Dr. M.H. Mian. Professor, Department of Soil Science, Bangladesh Agricultural University, Mymensingh, Bangladesh Email: soilbau@mymensingh.net	One year (April 2001 - March 2002)	Completed and final report under preparation	Approved: Tk. 254,800 Disbursed: Tk. 229,324
05	Ecology of euglenophytes in aquaculture ponds and their role in fish production	Dr. Saleha Khan, Assistant Professor, Department of Fisheries Management, Bangladesh Agricultural University, Mymensingh, Bangladesh Email: salehamk@bdcom.com	One year, (June 2001 - May 2002)	Completed and final report available	Approved: Tk. 237,315 Disbursed: Tk. 237,315
06	Economic analysis of the sustainability of supplementary feed-based aquaculture	Md. Rais Uddin Mia. Assistant Professor, Department of Agricultural Finance, Bangladesh Agricultural University, Mymensingh, Bangladesh Tel: (091) 55695-97/2260 Email:	One year, (August 2001 - July 2002)	Completed and final report under preparation	Approved: Tk. 225,000 Disbursed: Tk. 170,759

Attachment 7 Completed and ongoing Research Projects as of 30 September 2003 (continued)

Grant No	Name of the Project	Principal Investigator Name and Address	Project tenure	Existing status	Funds status
07	Study of inbreeding problems of Thai Pangas (<i>Pangasius sutchi</i>) in Bangladesh using allozyme electrophoresis (Mymensingh region)	Dr. Md. Mukhlesur Rahman Khan Assistant Professor Department of Fish Biology and Genetics Bangladesh Agricultural University, Mymensingh 2202 E-mail: mukhles@royalten.net	One year (December 2001 - November 2002)	Completed and final report under preparation	Approved: Tk. 250,000 Disbursed: Tk. 250,000
08	Socio-economic aspects of freshwater prawn (<i>Macrobrachium rosenbergii</i>) culture development in Mymensingh	Dr. Nesar Ahmed, Assistant Professor, Department of Fisheries Management, Bangladesh Agricultural University, Mymensingh, Bangladesh Tel: (091) 55695-97/2281 Email: nesar@royalten.net	One year (January 2002 - December 2002)	Completed and final report under preparation	Approved: Tk. 126,000 Disbursed: Tk. 126,000
09	Management of Euglenophytes in Aquaculture Ponds for Improving Fish production in Bangladesh	Dr. Saleha Khan, Assistant Professor, Department of Fisheries Management, Bangladesh Agricultural University, Mymensingh, Bangladesh Email: salehamk@bdcom.com	One year (January 2003 - December 2003)	On-going (continuing component)	Approved: Tk. 290,000 Disbursed: Tk. 261,000
10	Study of inbreeding problems of Thai Pangas (<i>Pangasius sutchi</i>) in Bangladesh using allozyme electrophoresis (Bogra region)	Dr. Md. Mukhlesur Rahman Khan Assistant professor Department of Fish Biology and Genetics Bangladesh Agricultural University, Mymensingh 2202 E-mail: mukhles@royalten.net	One year (January 2003 - December 2003)	On-going (continuing component for Bogra)	Approved: Tk. 290,000 Disbursed: Tk. 261,000
11	Development of HACCP Based Quality Management Systems for freshwater Prawn (<i>Macrobrachium rosenbergii</i>) at Field Level for Improved Production, Handling, Preservation and Transportation.	Dr. Md. Kamal and Dr. Md. Nazrul Islam Professors, Department of Fisheries Technology, Faculty of Fisheries, Bangladesh Agricultural University, Mymensingh, Bangladesh.	One year (1 April 2003- 31 March 2004)	On-going	Approved Tk. 250,000 Disbursed: Tk. 100,000
12	Development of a Low Cost Feed Using Local Feed Ingredients for Culture of Freshwater Prawn (<i>Macrobrachium rosenbergii</i>) in Ponds by Rural Farmers.	Dr. Md. Arshad Hossain Professor, Department of Aquaculture, Faculty of Fisheries, Bangladesh Agricultural University, Mymensingh, Bangladesh	One year (1 April 2003- 31 March 2004)	On-going	Approved Tk. 250,000 Disbursed: Tk. 175,000

Attachment 7 Completed and ongoing Research Projects as of 30 September 2003 (continued)

Grant No	Name of the Project	Principal Investigator Name and Address	Project tenure	Existing status	Funds status
13	Culture and Artificial propagation of freshwater eels (<i>Monopterusuchia</i> and <i>Mastacembalus armatus</i>)	Dr. S.M. Rahamatullah Professor, Department of Aquaculture, Faculty of Fisheries, Bangladesh Agricultural University, Mymensingh, Bangladesh	One year (1 April 2003-31 March 2004)	On-going	Approved Tk. 250,000 Disbursed: Tk. 175,000
14	Investigation of Diseases and Development of Strategies for Improved Health Management of Thai pangus (<i>Pangasius sutchi</i>) Cultured in Rural Ponds in Mymensingh District.	Dr. Md. Ali Reza Faruk Associate Professor, Department of Aquaculture, Faculty of Fisheries, Bangladesh Agricultural University, Mymensingh, Bangladesh	One year (1 April 2003-31 March 2004)	On-going	Approved Tk. 250,000 Disbursed: Tk. 175,000
15	Marketing of Small Indigenous Fish Species (SIS) and Socio-economic Aspects of SIS Producers, Intermediaries and Retailers with Sustainable Livelihood Approach in Three Fish Markets of Mymensingh.	Dr. Mostofa A.R. Hossain Associate Professor, Deptt. of Fisheries Biology and Genetics, Faculty of Fisheries, Bangladesh Agricultural University, Mymensingh Bangladesh	One year (1 April 2003-31 March 2004)	On-going	Approved Tk. 250,000 Disbursed: Tk. 175,000
16	The Sustainable Livelihood Approach of Prawn Distribution and Marketing System in Mymensingh	Dr. Nesar Ahmed Assistant Professor Department of Fisheries Management Bangladesh Agricultural University Mymensingh	One Year (1 May 2003-30 April 2004)	On-going	Approved: 218,000 Disbursed: Tk. 152,600
17	GIS study in Mymensingh region for sustainable aquaculture development and inland fisheries management	DR. M.A. Salam Assistant Professor Department of Fisheries Management Bangladesh Agricultural University Mymensingh	One year (1 September – 31 August 2003-4)	On-going	Approved: 267,000 Disbursed: Tk. 104,000
18	Livelihood assessment of fish seed traders: PRA and household survey	Mr. Mahmud Hasan Lecturer Department of Aquaculture and Fisheries University of Dhaka Dhaka	Seven months (1 August – 28 February 2004)	On-going	Approved: 244,400 Disbursed: Tk. 97,760

Attachment 8 USAID-funded staff list as of 30 September 2003

No	Name of Staff	Position	Date Employed
1	Drs. Johannes Janssen	Senior Aq. Scientist/Project Leader	01 September 01
2	Prof. Md. Ferdous Alam	Research Coordinator	01 July 01
3	Naseem Aleem	Field Coordinator IAA	01 June 02
4	Dr. Khondker Murshed-e-Jahan ¹	Research Associate/Fellow	24 January 01
5	Reazul Karim	Research Associate	01 November 02
6	Ms Israt Zahura	Research Associate	15 June 03
7	Kh. M Shameem Kamal	Research Assistant	01 July 99
8	Ms Manuara Azim	Research Assistant	01 July 99
9	Md. Jahirul Hoque	Research Assistant (M&E)	11 March 01
10	Mohammed Mokhlesur Rahman	Research Assistant (M&E)	11 March 01
11	Md. Abul Kashem	Research Assistant (Extension)	20 May 01
12	Md Nazim Uddin	Research Assistant (Extension)	29 May 02
13	Md Abdur Razzaque	Research Assistant (Extension)	29 May 02
14	Syed Arifuzzaman	Research Assistant (Extension)	29 May 02
15	Mir Mostaque Ahamed	Research Assistant (Extension)	29 May 02
16	Md. Asadul Hoque	Research Assistant (Extension)	23 June 02
17	Md. Khabirul Hasan	Research Assistant (M&E)	9 June 02
18	Ms Chamon Ara Begum	Research Assistant (M&E)	9 June 02
19	Saiful Islam	Research Assistant (M&E)	1 July 02
20	Ferdous Ali	Research Assistant (M&E)	11 May 03
21	Shamin Parvez	Research Assistant (M&E)	11 May 03
22	Zamal Uddin	Research Assistant (Extension)	14 May 03
23	Bibhu Bhushan Nazumder	Research Assistant (Extension)	15 June 03
24	Md. Shakil Ahmed Khan	Research Assistant (M&E)	1 July 02
25	Reza Md Ali Kareem ²	Office manager	10 Feb. 02
26	Bijoy Bhushan Debnath	Administrative Officer	01 May 90
27	Khan Golam Rasul	Accounts Officer	01 June 96
28	Md. Billal Hossain	Administrative Assistant	01 August 99
29	Ms Maksuda Khanam	Administrative Assistant	01 May 02
30	Ms Fahmida Ahmed ³	Receptionist	03 June 03
31	Md. Abdur Razzak	Driver	01 May 89
32	Md. Dulal	Driver	01 May 99
33	Md. Nazrul Islam	Driver	01 October 01
34	Tapan Chandra Sarker	Messenger	01 July 93
35	Md. Idris Ali ⁴	Messenger	01 June 98
36	Md. Abdul Wahab ³	Messenger	01 September 98
37	Md. Mahade Hasan Babul ³	Messenger	01 July 01

¹ Costs shared DSAP (80%), FRIAP (20%)

² Costs shared by WorldFish HQ (50%); CBFM-2 (25%) and DSAP (25%)

³ Costs shared by CBFM-2 (50%) and DSAP (50%)

⁴ up to 16 September 2003