

**The Use of Sluice Gate for Stock Enhancement and Diversification of
livelihoods (R8210)**

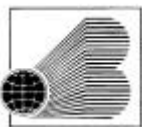
Report of the National Workshop
Held in May 2005, Dhaka

May 2005

Compiled

by

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Introduction

The National Workshop on, “The Use of Sluice Gate for Stock Enhancement and Diversification Livelihoods” was held at the BARC Centre Auditorium, Mohakhali, Dhaka on 2nd May 2005. The Bangladesh Centre for Advanced Studies (BCAS) organized the workshop. The main objective of the workshop was to share findings of two years research project on “The Use of Sluice Gate for Stock Enhancement and Diversification Livelihoods” implemented in two sluice gates in PIRDP, Pabna and one sluice gate in CPP, Tangail during 2003 and 2004. The study has been jointly conducted by BCAS, the International Institute for Environment and Development (IIED), UK and the Marine Resources Assessment Group (MRAG), UK and supported by the Department for International Development (DFID) of the UK under the Fisheries Management Science Management (FMSP). About 63 participants from the Ministry of Water Resources, Bangladesh Water Development Boards (BWDB), Department of Fisheries (DOF), Department of Agriculture Extension (DAE), Water Resources Planning Organization (WARPO), Universities, representatives from many NGOs, Heads of different projects, Local Sluice gate committee members, Union Parishod (UP) Chairmen, Farmers and Fishermen representative of the study areas attended in the workshop and contributed to the research findings (Please see the list of participants; Annex-I). The workshop comprised of two sessions the inaugural session and the technical session (see Annex –II). Participants were provided with project summary report in Bangla and English. Participants’ speech and discussion were recorded on audiocassette and also hand notes were taken for preparation of this report.

The Inaugural Session was chaired by Dr. Saleemul Huq, Director of the Climate Change Division, IIED, UK, Mr. Md. Abdul Aziz, Secretary the Ministry of Water Resources, Government of the Peoples Republic of Bangladesh was present as the Chief Guest in the occasion. This session started with a welcome note by Dr. A Atiq Rahman, Executive Director of BCAS. Mr. Md. Liaquat Ali, Senior Fellow, BCAS presented overview and summary findings of the project. Thereafter, three Special Guests, (Mr. Enamul Haque, Director DAE, Md. Shariful Islam Akanda, Project Coordinating Director (PCD), Fourth Fisheries Project, DOF, and Md. Aminul Hoque, Additional Director General (O&M-2), BWDB made their valuable comments on the study as well as on the project findings. They also expressed their willingness to cooperate similar study in future at a larger scale.

Dr. M. Mazid, the Director General, Bangladesh Fisheries Research Institute (BFRI), chaired the technical session. The technical session was very active and participatory. Two research papers were presented in that session. Dr. A. Atiq Rahman on behalf of Dr. Ashley Hills presented one paper on “Hydrology and Fisheries”. Another paper on, “Understanding Institutional, Socio-economic Aspects of Sluice Gate Management” was presented by Mr. Sarder Shafiqul Alam. Two designated discussants namely Professor Dr. Md. Aminul Islam, Bangladesh Agriculture University and Professor A H G Quddus, Chittagong

University took part as designated discussant on fisheries and socio-economic respectively. In open discussion 12 participants took part in discussion on different issues on the improvement of sluice gate management for enhancement of farmers and fishers livelihoods.

Inaugural Session

Dr. A Atiq Rahman, Executive Director of BCAS welcomed the participants. He told that the IIED, MRAG and BCAS work with experiences in floodplain fisheries management, and environment & development for poverty reduction jointly conducted this study. He briefly described the project background and objective of the work. He said that implement through the FCD/FCDI water management projects were needed and it has contributed positive impact on rice production in the country. However, it has created some negative impact on floodplain fisheries and livelihood. The purpose of this workshop was is to share knowledge of different stakeholder. He also informed that the National workshop in Dhaka was the final workshop of a series of Upazila and local workshops for sharing findings of the study on the Use of Sluice gate for Stock Enhancement and Diversification of Livelihoods.

Mr. Md. Liaquat Ali, Senior Fellow of BCAS gave an overview and summary findings of the study. Mr. Ali described the multi-faced uses of water in crop cultivation and for fishing as major rural livelihood activities and the declining trends of floodplain fisheries. The poor people are very often denied from their access to and rights of using fisheries / water bodies for maintaining their livelihood. He also focused importance on the use of sluice gate for increasing fish production without damage to rice production.

Regarding the methods, he informed that the study used multiple methods of information gathering including hydrological and fisheries monitoring and understanding socio-economic aspects in relation to sluice gate operation and use. The study has developed a protocol for using by different stakeholders. He highlighted the following key findings and recommendation:

- Fish passes success increase with increase on water flow through the sluice gate. Early opening of the sluice gate particularly in June is important to increase fish migration from main river to inside the sluice gate for increasing natural fish stock without damage for rice production.
- More than 50 per cent fishes are caught before that fishes arrive at the sluice gate from the main river. This sort of fishing need to be controlled particularly during flood rising months.
- There should have sluice gate committee for each of the gate and they should be trained on how to make their effort efficiently.
- There is need to establish fish sanctuary in the Beel and
- Re-excavation of canal to keep water there and improve fish migration timely

- Upazila monthly coordination committee meeting should include an agenda about to sluice gate operation/management.

Speech of Special Guests

Md. Aminul Hoque, Additional Director General (O&M-2), BWDB said that they have constructed more than 4000 hydraulic structures (including sluice gates) since 1960s to improve agriculture production. BWDB programme helped increase agriculture production and social livelihoods. But in the past they did not think of fish production. He mentioned the fish production declined for many reasons including over fishing, siltation of river, and loss of habitat. Since 1990s they are trying to improve both crop and fish production in floodplain. The present research findings have shown some interesting findings in relation to increase both fish and rice production. He suggested that the team should conduct similar study in all different environmental zones to make a useable protocol for all sluice gate. He mentioned that the BWDB would fully support the research team for further studies with more sluice gates.

Md. Shariful Islam Akanda, PCD Fourth Fisheries Project, DoF highlighted that the study gave them new area of thoughts, that, the best use of sluice gate can improve fisheries production as well as livelihoods. There is need for training of beneficiaries and sluice gate management committee member to ensure their real participation, which is essential in operation of sluice gates

He urge the needs to carry out the similar study in more sluice gates to provide adequate information on each environmental zone specific gate operation. DoF would actively support to conduct the study in future.

Mr. Enamul Haque, Director of DAE opined that the Agriculture does not mean only crop cultivation. It also includes, fish and livestock (meat). So all sectors should work in an integrated manner for the benefit of farmers and fishers.

Speech of the Chief Guest

Md. Abdul Aziz, Secretary, Ministry of Water Resources thanked to the presenter for presenting very interesting finding to optimize the use of sluice gate for diversified livelihoods. He was grateful to DFID for

sponsoring such a good study. He pointed out that the Water Ministry was engaged in removing poverty in general.

He informed that the country gets about 250 cubic km water rainfall per annum. In monsoon months (July to October) we get six times more water than that we need for daily life. In contrast of that fact, in dry season we hardly get half of the amount of water, against our requirement. We get about 90% of water from outside the country and rest 10% from within the country. Bangladesh has severe imbalances of water availability exist during different period of the year. It is inevitable that any solution for a problem of water used will have an adverse impact on another. The issue then becomes one of minimizing the impacts. This needs for an integrated approach to water resources management where cross-sectional integration is a pre-requisite.

He informed that the water Development Board has implemented 653 schemes with 12000 km of embankments, 25000km canals excavated/re-excavated and about 4200 hydrological structures (including sluice gates).

He pointed out that the Sluice gates are not always fish friendly. In the past, the aim was to increase mainly rice production. Since early nineties, BWDB focus has shifted to include both rice as well as fish. They have introduced fish friendly regulators in some of their new FCD/FCDI projects. CPP at Tangail is a unique example. Main inlet of the project has been designed and implemented as fish friendly structure.

He appreciated that the study has broken the ice and it should be extended for whole country and even in other countries. He pointed out that the study has shown very interesting findings to optimize use of sluice gate and to develop protocol that is very important for the increase of fish production without changing the structures. He thought, the study would not only help in refining the operation rules of the inlets structure of CPP and PIRD Pabna projects, would also provide valuable guidelines for the operation of sluice gate/regulators of all BWDB projects for enhancing fish migration in the project area without affecting the agriculture production.

This study was done on only 3 gates. It should be widened to include more sluice gates.

He opined that the study would be case-specific but after applying in number of sluice gates the study findings could be generalized for all sluice gates.

He hoped that the technical session would discuss the identified issues and concern in relation to water management.

Address by the Chair

Dr. Saleemul Huq, Chairperson of the session, thanked the Chief Guest, Special Guests and Participants. He pointed out that the IIED was one of the partners in this study (although he was from Bangladesh). They are very much pleased to be the partner of MRAG and BCAS for conducting such a good study. He expressed his gratitude and thankfulness to the chief guest **the Secretary**, Ministry of Water Resources for his thought provoking and illuminating speech.

He also mentioned that the intensive research /monitoring was undertaken in the study with three gates and the study Taking this as a base, the study could be undertaken in larger number of sluice gates (40-50) with key indicators for developing a general but simplified protocol for the remaining 3000 plus gates.

He appreciated the willingness of the Ministry of Water Resources, BWDB, DOF and DAE for their support in future work.

Technical Session

Dr. A Atiq Rahman, Executive Director of BCAS presented the paper on “Operating Sluice Gates to Improve Livelihoods: A fisheries perspective”. In the presentation he described the background, study purpose, study sites, methods, results, conclusion and recommendations.

The study findings showed fish could successfully migrate through sluice gates. Therefore gate should be recognized as important structures for improving the recruitments of fish to modified floodplain. Fish attempt to migrate into the FCDI throughout the year. During the early flood (June-July) immigrating fish largely comprise small juvenile fish but are also accompanied by sexually mature individuals that have either recently spawned or will spawn imminently. Thus sluice gates should be operated to ensure fish could enter into the schemes during the **rising flood** period **before** they spawn to maximise recruitment. Sluice gate management practices during the **rising flood** are likely to have the greatest positive impact.

Mr. Sarder Shafiqul Alam, Research Fellow BCAS presented the paper on “Understanding Institutional, Economic and Social Aspects of Sluice Gate Management in Bangladesh”. In the presentation he described the study background, objective, sites, methods of information gathering, key findings, and recommendations. He pointed out that farmers get direct benefit since construction of sluice gate. While livelihoods opportunity and household capital assets of particular community has increased, the fishers and wage labours household’s assets have reduced during the same period.

He pointed out that the fish production could be enhanced by improve sluice gate operation and through the decision of functional committee. There should be an effective committee for each of the sluice gate with participation of farmers, fishers and other relevant stakeholders from inside and outside the sluice gate with representative from all geographical location of the gate catchments area. The committee members should be provided training. The committee members should have more cooperation in taking right decision. Enforcement of Fish Act, re-excavation of canal as part of fishery improvement, seasonal ban of fishing in particularly link canal have been recommended in the presentation.

Comments of the Designated Commentators

Professor Dr. Md. Aminul Islam, Faculty of Fisheries, Bangladesh Agriculture University said that the FCDI structure were built to control flood water to grow rice to meet up shortage of food in the past. Floodplain of Bangladesh support diverse and productive aquatic environment and make them important fisheries. Floodplains employ about 75% rural people in catching fish. It provides part-time employment of about 12 million people of Bangladesh and also important animal protein for the poor. Now over 40% of floodplains are modified and reduced fishery area, making fish more vulnerable. Though there was need of flood protection structure to make farmers benefited, but unfortunately the structure impacted adversely on the fisheries. Now it is recognized that there is need for equitable distribution of the benefit of the sluice gate among all stakeholders. He agreed with all 11 eleven that findings of the study. However, he did not totally agree with the findings that fish migration only need from the main river to beel. He mentioned that there should be the opportunity for fish to return back with the ebb flood to the main river from the beel, so that they can breed there or migrate to the beel in the next year. He suggested the following:

- Improve sluice gate management during rising tide for increasing maximum benefit. During the ebb tide gate should be opened so that fish can go back to the main river and return back in the next year.
- Inclusion of local people in the gate management committees needs to be done carefully. There should be a committee from the real people not from political people.
- There is need fish habitat improvement or re-excavation and enforcement of fish Act. Improvement of sluice gate design is needed to increase fish migration. BCAS should consider all environmental zones in Bangladesh to develop a protocol for the use whole of Bangladesh.
- There should be combination of top down and bottom up approach in the sluice gate management.
- For fish conservation we have to establish fish sanctuary and it should be protected.

Professor AHG Quddus, Sociology Department, The Chittagong University

He said that policy during sixties and seventies were found on food production and that was successful by the construction of FCDI structures. In early 1970s pollution problem was the topmost one. It required to grow more rice in those days to feed the striving population. This led to

floodplain crop production without considering fish or fishers livelihoods. In that case the present study was already an over due task.

In sociological aspects of methodologies rigorous 7 methodologies have been used for data collection. It means the data collection methods were very strong.

One flaw was that the data were collected only from the inside of the sluice gates, outsiders of the gate area were excluded. Only comparison was done current / past (from recollection).

Data quality looked impressive.

Mainly people inside the polders area recognized themselves as poor.

Majority inside are landless and are the hard-core poor. So poverty did not decline. Embankment and structures have obviously improved the economic condition of one group of dwellers (especially the land owners inside the polder area). Gatekeeper some time, disobey UNO's instructions – because he is supervised by the BWDB and not by the UNO. If the gatekeeper disobeys the order of the head of the committee, the head could merely do anything.

Committee structure needs to be changed with enough representatives from fisher, farmer, and other groups.

Mechanism could/should be developed on how the committee could be empowered? This could be included in future study. He claimed that in the recommendation part it has been mentioned regarding the involvement / responsibilities of the government officials only, the community people are missing. It should also include how the community people could participate actively on the management of the gates.

OPEN DISCUSSION

Mr. Sirajul Karim, District Fisheries Officer (DFO), Pabna. He said that the present study did not consider the fish/rice production and fish behavior of the whole beel area. He mentioned that farmers are using about 50 different pesticides in their crop fields, which are affecting fish. He emphasized on IPM and motivation of farmers. He also highlighted that the need of enforcement of fish Act.

Mr. Abu M Kamal Uddin, ICZM said that he worked in the CPP from 1992-1997. The CPP conducted study on open water fisheries. He thought that there was sufficient data / information in different studies over last 15 years. With these results we can directly go for implementation without waiting for more research. This will need people's participation. Under 2004 Act. BWDB

has to take up “people’s participation”. He wanted to see its action in the field. There is a crucial need for functional sluice gate committee. Simultaneously we can go for more study.

Mr. Moklesur Rahman, Senior Upazila Fishery Officer, Tangail, thanked the research team.

He suggested the following:

There is need for stocking within the floodplains.

Jugini gate requires more gate aperture.

The production of all harmful gears should be stopped.

Fishers and fish fry collectors need to be provided with alternate livelihood options.

Shahidul Hoque, Executive Engineer, LGED said we can follow the existing New Water Management Plan Guideline have been approved in 1999.

We need to follow that guideline.

Need to know, how to improve hydraulic structures (either new “fish-friendly” or new structures)?

How the existing sluice gate operation could be ensured?

How fish can migrate safely through the gates?

Key elements of operation are:

- When to open?
- When to close?
- Who decides?
- On what info?

Dr. Anwara Begum (Shelly), Director, Caritas fisheries program, highlighted that local fisheries rules would be developed with local indigenous knowledge rather than emphasizing only on Fish Act. Needs to include. She suggested, BCAS should take more sample sluice gates for further study form all over the country.

Dr. Liaquat Ali, ICZM , There are four Fish Passes in different parts of the country.

All study sites are in the central floodplain area. There are many different types of polders and different types of gates e.g. flap gates (inflow only), flap gate and vertical gate (both in flow and out flow) etc. Polder wise water management varies and is complicated. So further study needs to carry out in all major environmental condition and polder types in the country.

Mr. Golam Rasul, Farmer Representative of Talimnagar Sluice Gate Committee said that the sluice gate has improved agriculture production considerably and reduced food shortage. Poor

people get rice to take. Fish is an important resource and helps many poor people to earn livelihoods. These fishing communities are disappearing day by day as fish production is decreasing within the polder area. He suggested to open the gate on first week of June to allow fish for migration into the floodplain through Talimnagar Gate. He also suggested that harvesting of fish fries from outside the sluice gate should be stopped in the link canal/river.

Andrew Jenkins, IPSWAM, mentioned that they were implementing the project activities following the guidelines (????) on how people can participate. It is important to know whether the agriculture production simultaneously increase the employment opportunities. Poor gets benefit from polders (through employment). Coastal Zone is different (tidal) from other parts of the country – in brackish water areas where virtually no sluice gate operation committee exists, studies need to be carried out to formulate appropriate gate management protocol.

Fish might be getting caught in the channels. A geographical approach is needed and which should not only focus on sluice gates. Sanctuaries can also contribute to recharging ground water.

It needs better quality gates for improving operation of gates. We need to know whether the fish migrate to the floodplains in coastal area.

Mr. Kuif, BWDB said that he was happy to know that some farmers in this workshop identified the time, when the gate should be opened.

Mr. Subod Chandra, UFO, Tangail, mentioned that many people were migrating to Tangail Town. All beels have become dry and everywhere people are practicing aquaculture. There is no more broadcast Aman rice in this area. HYV rice engulfs every piece of lands. A comparison should be made to know the changes in fish production in the floodplains since the gates are built.

Dr. Golam Mostafa – WorldFish Center, said that they are working with 120 water bodies. He mentioned that it was better to deploy integrated efforts by the technological and social researchers. He also wished to share the existing useful models for future studies. BCAS should take initiative to implement the study findings at field level.

Mr. Kafiluddin – Fourth Fisheries, DOF, Thanked the research team for undertaking such an important study for development of fisheries in Bangladesh.

He stated that open water fisheries have been negatively affected over the last decades partly due to FCD projects.

According to him it is important to know the “turbulence tolerance” limits of spawns of different fish species.

Fish friendly regulators are included into Fourth Fisheries Project that has increased fish migration. However, community involvement needs to be ensured to operate those gates.

Mr. Enamul Haque, Director, DAE, said the research team should conduct SWOT analysis to know which activities were important for particular season, who get more benefit from which resources. It is important to know more detail on how to improve fish production without damaging rice production. BCAS should raise priority problematic issues in relation to water management to the Water Resource Ministry, otherwise only implementation of fish act could not increase fish production.

Dr. A Atiq Rahman, ED, BCAS, appreciated the open discussion, as it was very lively and very relevant with the presentation. He said that the study has brought historical change in the concept of water management in the FCD/FCDI Programmes. Many participants pointed out that though the study was done in limited in number of study sites but findings were very relevant. He said that every research has to select study site as per proposed TOR, time and budget. The complex sluice gate system does not have simple solution. He asked all relevant organization to join with BCAS team to work jointly in future. It is important to clarify how many gates are required (10 or 20 or 30 or more) before undertaking similar study in future. Regarding advocacy at national level study team should concentrate more on scientific study. He informed that all speech and discussion have been recorded and took notes for preparation the workshop report. The report will be distributed to all of you. After 20 years movement there is peoples participation in several water management project. Now concepts have changed in water sector in Bangladesh.

Address and Concluding Remarks by the Chair

Dr. M. Mazid, Director General, Fisheries Research Institute

He highly appreciated the presentation, comments made by designated commentators and discussion of large number of participation from the audience.

He said that the water management structure had two purposes namely (a) increase crop production and (b) prevent flood.

Crop production has increased tremendously. In the past (1970s) the country faced famine, recently we do not have any shortage of rice. But how far we have success in flood protection? We have now more devastating floods. It is not reduced as it was expected. Siltation on riverbed increased. Fisheries need water because water is prime requirement for fish.

Fishery is also at risk due to climate change. There has been adverse effect by climate change particularly due to drought.

Study findings showed, fish production reduced in floodplain. We should give attention how to minimize the fish shortage problem. He appreciated Professor Aminul's concern of habitat restoration. In future BWDB should re-excavate river and canal to increase water holding capacity as well as increase flow of water. Improvement of natural water body is necessary. He also requested BWDB and LGED to increase their staff member with fisheries background. Fish conservation is also important and it can be done through upgrading Fish Act.

He said that there was need to improve water bodies. The use of pesticide in crop fields to be monitored for maintaining the quality of water for fisheries.

We should think to reserve water in beel, river, etc. that will increase arsenic free water availability and for fish.

He thanked the participants for their active participation in the workshop. Further he thanked BCAS, IIED, MRAG for undertaking the study and to DFID for supporting such a good study. Lastly he gave special thanks to BCAS staff for organizing the National level dissemination workshop.

**National workshop on
The Use of Sluice Gates for Fish Stock Enhancement and
Diversification of Livelihoods**

List of Workshop Participants

Date: 2 May 2005 (Monday)

Sl. No.	Name of Participants	Name of Organization Address & E-mail	Telephone & Mobile No.	Signature
1	Md. Serajul Karim	DOF, Matsha Bhaban, Dhaka	017-133130	
2	Shadhan Ch. Das	Upazila Fishery Officer Sujanagar, Pabna	0175006731	
3	Gulam Rasool	Sluice Gate Committee Member, Sujanagar, Pabna	0176719359	
4	Md. Habibur Rahman	U.P. Chaman Dulai Sujanagar, Pabna	0172-3389	
5	M.A. Khaleque	Farmer, Tangail		
6	Me. Mukhlesur Rahman	Senior Upazila Fishery Officer, Tangail	0171-172095	
7	Md. Shamsul Azam	Chairman, Sagar Kandi, Pabna	0172-295625	
8	Prof. Dr. Md. Aminul Islam	Fisheries Faculty, BAU, Mymensingh	011074401	
9	Mr. Enamul Haque	Director, Department of Agriculture Extension	Special Guest	
10	Dr. A. Atiq Rahman	Executive Director, BCAS	-	
11	Dr. Saleemul Huq	Director of Climate Change Division of IIED	-	
12	Md. Shariful Islam	PCD Fourth Fisheries, DOF	9569934	
13	A.H.M.Kauser	Director Planning –III, BWDB	9124934	
14	Shyamal K. Barman	Fishery Biologist, BCAS	0191012328	
15	Milly Barua	Research Officer, BCAS	8851237	
16	Sadhan Haldar	Fishermen Tangail		
17	Md. Solyman Hossen	Field Researcher, Tangail		
18	M. Abul Khair	BRAC		
19	Md. Qudrat-E-Ghani	UAO, Sujanagar, Pabna	0171-816452	
20	A.B.M. Towfique Hassan	Chairman Raninagar Sujanagar, Pabna	0172-264828	

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21	Md. Mokbul Hassan	UP Member, Raninagar, Sujanagar, Pabna	0176935873	
22	Md. Mahbubur Rahman	Md. Mahbubur Rahman	9571696	
23	Md. Aminul Hoque	Md. Aminul Hoque	9562287	
24	Shakil Ahmed Khan	Bangladesh Environmental Lawyer Association	0171669562	
25	Dr. Daniel Hoggarth	SCALES Inc.	12464340919	
26	ARNE ANDEARSSON	Team Leader of Fourth Fisheries		
27	Giasuddin A. Chowdhury	CEGIS		
28	Md. Liaquat Ali	Senior Fellow, BCAS		
29	Sarder Shafiqul Alam	Research Fellow, BCAS	0171840441	
30	Dr. Md. Liakath Ali	PDO – IC+MP	8826614	
31	M.I. Sharif	Senior Fellow, BCAS	8851237	
32	Lucia Renard	BCAS-Research Student	8851237	
33	Nora Meyer	BCAS-Research Student	8851237	
34	Abu M. Kamal Uddin	PDO-ICZMP		
35	Md. Abdul Aziz	Secretary, Ministry of Water Resource		
36	Md. Abdul Alim	Senior Research Officer, BCAS	8851237	
37	Azra N. Ahmad	Senior Research Officer, BCAS	8851237	
38	Faruque Ahmed	Programme Manager, BCAS	8851237	
39	Jaba Chgakraborty	Research Officer, BCAS	8851237	

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40	Professor A.H.G. Quddus	Chittagong University		
41	Bidhan Ch. Tikaker	Senior Research Officer, BCAS		
42	Anwara Begum Shelly	CARITAS, Director Fisheries Programme	8017609 018241220	
43	Dr. M. Eusuf	BCAS, Senior Fellow	8851237	
44	Khorshed Alam	Director, AMRF	8119260	
45	Mokhlesur Rahman	Executive Director, CNRS	9886700	
46	Dr. M.G. Mustafa	World Fish	0175007632	
47	A.K.M. Kaykubad	Dist. Fisheries Officer DOF, Tangail	0921/53678	
48	Subodh Chanda	Upazila Agril. Officer, Tangail	0171-437154	
49	Md. Kafil Uddin	Fourth Fisheries Project DOF	9560653	
50	Dr. M.A. Wahab	Fisheries Faculty, BAU, Mymensingh	091549	
51	Dr. Zoarder Faruque Ahmed	Fisheries Faculty, BAU, Mymensingh	0172-269016	
52	Abdul Muyeed Chowdhury	Executive Director, BRAC	9881265	
53	Andrw Jenkins	IPSWAM/BWDB	0175007244	
54	Saidul Islam	BRAC	01764446131-2371	
55	Rownak Afroz	BRAC		
56	Md. Shahidul Haque	LGED	9127411	

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57	Md. Abdul Baten	BNDB, Tangail	0921-53401 0921-53464	
58	M.A. Mahmood	BCAS,	8851237	
59	Kh. Mainuddin	BCAS, Senior Fellow	8851237	
60	Golam Rabbani	BCAS, Senior Research Officer	8851237	
61	S.M. Alauddin	BCAS,	8851237	
62	Dr. M.A. Mazid	BFRIDG, BFRI		
63	Ms. Nasreen Rahman	BCAS,		

