

EDITORIAL

The devastating impacts of global climate change are being felt in different parts of the world in various forms in different degrees. The recent prolonged floods in Bangladesh, severe heat waves in Europe and the catastrophic cyclonic storms in the Atlantic coast give clear indications of such climate change induced disasters across the globe.

Mitigation measures to prevent the concentration of GHGs in the atmosphere are must and first step toward stabilizing dangerous climate change. Implementation of Kyoto Protocol by the developed and developing countries may help the global communities to lay the foundation of efficient uses of energy and reducing GHGs emission for preventing dangerous climate change. We hope the Eleventh Session of the Conference of the Parties (COP-11) in Montreal, Canada under the UNFCCC will take bold steps in this regard. However, local communities also need capacity to adapt better with the emerging climatic events. The main article of this newsletter focuses on the Dhaka International Workshop on Adaptation to Climate Change, which facilitated to share the ideas and experiences in relation to community adaptation to climate change impacts, particularly from the southern countries.

The second article of this Bangladesh Environmental Newsletter (BEN) highlights the importance of poor's contribution to conservation of natural resources and environment. There are many good experiences of conservation by poor, which deserve policy supports. The other articles of this issue focus on outreach programme of UK-Dfid and drinking water problems of the poor in the fringe areas of Bangladesh.

Dhaka International Workshop on Climate Change Adaptation held:

Local Communities need to adapt better to Climatic Events

Local communities living in parts of the world at risk to climatic impacts such as heat waves, droughts, floods and hurricanes, will need to adapt to climate change which will have a disproportionate impacts on such vulnerable communities around the world. This was the main conclusion of a three-day international workshop held in Dhaka, Bangladesh from 16-18 January 2005. The international workshop, the first of its kind, was attended by about eighty experts, policy makers, funders, NGOs and grass-roots practitioners mostly from the Asia Pacific region, but also from Africa, Latin America, North America and Europe discussed the

possible impacts of climate change on the local communities living in regions that are at risk to climate impacts and how to enable them to adapt to such climatic events in future. It was jointly organised by the Bangladesh Centre for Advanced Studies (BCAS), the International Institute for



Dr. Saleemul Huq, Chairman of BCAS and Head of the Climate Change Division of IIED Addressing the Inaugural Session of the Dhaka International Workshop *Contd on page 4 & 5*

Contribution of the Poor in Conservation: The Emerging Good Practices

The world is faced with a major paradox in which the net wealth in the planet has increased manifolds with a concomitant increase in poverty. There is an increasing recognition of the need for environment protection and conservation. The UNCED process in Rio contributed to this recognition but failed to address and integrate the concerns of poverty into the sustainable development discourse at that stage. The poor can and often do play a significant role in conservation of natural resources and ecosystems for their survival through sustainable harvesting of the resources. Only by making the poor an essential and important part of the solution of poverty reduction (not perceived only as

problem) can help address the poverty reduction and conservation nexus simultaneously. A deeper understanding of the nature of poverty, poor's own capacity, role and potential in conservation and poverty alleviation are essential. This would only succeed when a set of pro-poor and pro-conservation policy supported with enabling institutional arrangement and activism is initiated. There are multitude of emerging good examples and innovative practices in different regions of the world, but often isolated and truncated. Thus these do not influence the mainstream policy frame and still the multiplication of the good practices remains an eternal challenge.

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Outreach Programme of DFID-FMSP for Management Floodplain Fisheries

Floodplains play a vital role in the inland fisheries production system by supporting livelihoods and providing nutrition to the rural poor. But the floodplain fisheries had declined significantly during the last few decades due to manmade and natural causes such as over fishing in absence of any good management practices, loss and degradation of fish habitats by construction of embankment and Sluice Gates under FCD and FCID projects. The government agencies, Non-Government Organization and development partners in Bangladesh have undertaken a number of initiatives to increase fish production and to meet the growing demands of fish. The Department for International Development (DfID) of UK is one of the major development partners for Bangladesh and it has provided assistance for conducting a number of projects under its "Fisheries Management Science Programme" (FMSP) and "Natural Resources Systems Programme" (NRSP) in the last decade. These projects have generated many important findings and recommendations for fisheries management and strategies to be implemented for benefiting the poor and the ecosystems.

This scientific knowledge of management options for increased fish production and diversification of livelihoods require effective dissemination to reach all stakeholders such as policy makers, programme managers and beneficiaries.

The DfID has initiated such an outreach activity under the "Promotion of FMSP guidelines for floodplain fisheries management and sluice gate control" initiative. The project aimed at outreaching the key findings and recommendations of both FMSP and NRSP projects among the policy planners and relevant stakeholders at all level including local, sub-national, national and regional level stakeholders. Bangladesh Centre for Advanced Studies has jointly implemented the project with Centre for Natural Resources System (CNRS) in Bangladesh. The Marine Resources

Assessment Group, Scales Barbados, Aqua Service Limited (ASL) and International Institute for Environment and Development (IIED) from UK are also collaborating in the implementation of the project.

Outputs and Communication Channels

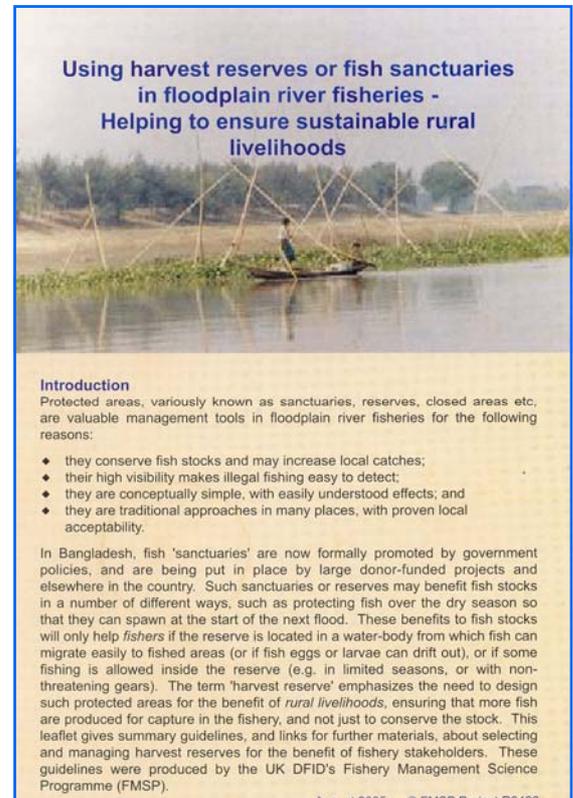
After the reviewing and evaluating the findings of the NRSP and FMSP projects, the following three strategies of floodplain fisheries management for sustainable livelihoods of the poor have been found most pertinent for outreach.

- Management of sluice gate operation for fish stock enhancement within the flood control scheme area/ modified floodplain;
- Establishment of fish harvest reserves / sanctuaries in floodplain rivers; and
- General management guidelines for floodplain river fisheries to ensure sustainable rural livelihoods.

The guidelines for management of floodplain fisheries to ensure sustainable livelihoods of the poor have been developed and disseminated to the relevant stakeholders through different communication mechanisms under this project. The communication mechanism include: awareness raising, policy brief and policy dialogue meeting with key stakeholders, power point packages for trainers, managers guidelines, leaflets, posters, bill boards, newsletters and newspaper articles, street theatre and pot songs, stall in fish fair, article in fish fortnight souvenir, websites (DFID, BCAS & CNRS) and national seminar. The Fisheries Ministers, Secretaries of Fisheries Ministry, Head of relevant government Departments and the key stakeholders attended the seminar in Dhaka.

Three interesting leaflets have been

prepared and distributed among the policy planners, academics, different level of government and non-government officials and institutions.



These are: a) Improving fish catches inside flood control schemes; b) Using harvest reserves or fish sanctuaries in floodplain river fisheries – helping to ensure sustainable rural livelihoods; and c) Management guidelines for Asian floodplain river fisheries – helping to ensure sustainable rural livelihoods.

Key Messages and Recommendations

The key messages and recommendations extracted from FMSP and FMSP projects and stakeholder discussion in meetings and workshops, for floodplain fisheries management for increased fish production and sustainable livelihoods of the rural poor have been classified under the following categories:

- Sluice gate management for fish stock enhancement and sustainable rural livelihood;
- Harvest reserves or fish sanctuaries in floodplain river

Severe Drinking Water Problems in fringe Areas of Bangladesh

A recent survey under an action research in five ecological zones of Bangladesh has identified various problems in relation to availability, access and quality of drinking water. The survey was undertaken in a number of villages in drought prone area in Rajshahi, riverine *Charland* in *Gaibandha*, salinity intrusion area in Bagerhat, arsenic affected area in Gopalganj and hilly areas in *Rangamati*. The survey reveals that people have very limited sources of safe water for drinking in those villages. Availability and quality of water is again affected by seasonal variations in those fringe localities. Further, the poor do not have adequate access to the available sources of drinking water and they have to suffer the most from lack of safe drinking water resulting in various water related diseases and ill-health.

The survey was conducted by an action research project entitled "Drinking Water Security for the Poor and Women". The project is being implemented by Bangladesh Centre for Advanced Studies (BCAS) and AMRF Society, Dhaka. The broad objective of the project is to search and establish sustainable drinking water options to ensure greater water security for the poor, women, children and marginal groups of people in the water stressed areas through participatory action and reflection, demonstrations, advocacy and empowerment of people with required information and knowledge, awareness and collective actions. The Interchurch Organization for Development Cooperation (ICCO) from the Netherlands and the Christian Aid from the United Kingdom are supporting the initiative.

The project has undertaken a baseline survey to collect relevant information from the project villages to describe the current situation in relation to sources of drinking water, problems in accessing safe drinking water, particularly by the poor section of the society and the associated health risks of the population due to lack of safe drinking water and poor quality of water. The survey was conducted during October-November in 2004. The survey followed a semi-structure format and a total of 2,378 households were included in the survey to assess the baseline situation of the selected villages in five ecological regions.

Table-1: Sources of Drinking Water in the surveyed Villages by Districts

Source of Drinking Water	Study Villages in Districts					All (%)
	Villages in Rajshahi *	Villages in Gaibandha *	Village in Gopalganj *	Village in Bagerhat *	Villages in Rangamati *	
Owned hand tube-well	3	182	118	-	18	321 (7.9)
Neighbor tube-well	77	321	184	-	31	613 (15.1)
Community tube-well	143	29	28	-	-	200 (4.9)
Deep tube-well	258	9	182	-	-	449 (11.1)
Shallow tube-well	-	226	-	-	-	226 (5.6)
Ring-well	-	-	18	-	289	307 (7.6)
Pond	-	-	75	383	5	463 (11.4)
River/Khal	-	12	6	473	260	751 (18.6)
Lake	-	-	4	-	6	10 (0.2)
Rainwater	-	-	5	489	22	516 (12.7)
Spring water	-	-	-	-	100	100 (2.5)
Patkua	16	-	-	-	43	59 (1.5)
Others	1	2	9	-	26	38 (0.9)

Sources of drinking water

The survey results shows that the people in the five villages collect drinking water from various sources and all the sources are not safe. The sources include: own hand tube well, neighbour tube wells, deep and shallow tube wells (mainly used for irrigation), dug wells, ponds, canal, river, lake, streams and rain water. The community people very often treat hand tube wells as the best sources of drinking water, but hand tube wells some times become inoperative due to draw down of ground water, particularly in Rajshahi and Gaibandha. Most of the hand tube wells in Gopalganj have high level of arsenic concentration posing serious health risk for the people who drink water from the arsenic affected tube wells for long time. The following table-1 shows the current practices of the villagers in relation to collection of drinking water.

* Multiple Responses

Majority people in the village of Bagerhat collect drinking water from monsoon rain, which is comparatively a safe source, but people can not avail rain water round the year and the collection as well as preservation of rain water is sometime very costly. The poor cannot afford this costly option though they collect rain water using indigenous methods

during rainy season only. The villagers in coastal districts also collect sweet water from the ponds, which are far away from the village. The villagers in Rangamati collect drinking water from canal, streams and ring-wells. Very often these sources are polluted and affect the community health. They also suffer from lack of adequate safe water during dry season. The poor community in Rajshahi collect drinking water from the deep tube wells established mainly for irrigation. Women have to collect drinking water from long distance in the villages. During the lean period of irrigation, they have to depend on unsafe sources such as pond and dug wells, which are not well maintained. Hand tube wells do not work in the village during dry season. The villagers in Gaibandha collect drinking water from hand tube wells, but the HTWs become inoperative during dry season due to draw down of ground water tables. Again the water of HTWs are highly



Water from a hill side stream is being collected by a women in Rangamati for drinking purpose. - BCAS

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Feature

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Environment and Development (IIED), UK, the Regional and International Networking Group (RING) and the World Conservation Union (IUCN). The workshop was supported by the development agencies of Canada and the United Kingdom.

Inaugural Session of the workshop

The two broad objectives of the workshop were: a) to share experience and lessons learned at community level related to adaptation to climate change; and b) to incorporate the adaptation issues within the broader development agenda.

Renowned environmentalists and climate change scientists from home and abroad addressed the inaugural session of the three-day workshop. A number of high-level national policy makers from Bangladesh also took part in some of the various sessions and made observations. Barrister Moudud Ahmad, the Minister for Law, Justice and Parliamentary Affairs of the Government of People's Republic of Bangladesh, was the chief guest in the inaugural session of the workshop.

The Law Minister of Bangladesh, in his inaugural speech, said that while the poor countries (and poor communities in all countries) will suffer the adverse impacts of climate change, the rich countries and rich people around the world, are the ones who are responsible for creating the problem of climate change. Speaking to them he said "you burn while our people die!". He highlighted the need for greater action on mitigation of greenhouse gases as adaptation can only be a partial solution to the climate change problem. "Unless the rich countries take greater action on mitigation no amount of adaptation will enable the world to escape the adverse impacts of climate change" he said.

Chaired by Mr. M Fazlur Rahman, Secretary of the Ministry of Planning of the government of Bangladesh, the occasion was also addressed by Dr. Saleemul Huq, Director of Climate Change Programme, International Institute for Environment and Development (IIED), London, Professor Barry Smit of University of Guelph, Canada, Dr. Farhana Yamin of the

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Institute for Development Studies (IDS) at the Sussex University of UK and Dr. Youssef Nassef of UNFCCC Secretariat, Bonn. Dr. A Atiq Rahman, Executive Director of BCAS gave the welcome address to the audience while Dr. Mahfuzul Haque, Joint Secretary of the Ministry of Environment and Forest of the government of Bangladesh gave vote of thanks to the distinguished guests and the participants.

Technical and Scientific Sessions

The three-day workshop was divided into eight technical sessions besides the inaugural and the concluding plenary. The technical sessions focussed on different interactive themes, which include: understanding adaptation to climate change; partnerships in adaptation; adaptation in practice; community responses to climate change; confronting climate change vulnerability; mainstreaming adaptation in development; knowledge management and responding to climate change by different sectors.

Dr. Ainun Nishad, Country Representative of IUCN Bangladesh chaired the first technical session on Understanding Adaptation to Climate Change. Dr. Richard Klein of Potsdam Institute for Climate Impact Research (PIK) from Germany made presentation on Concept and Science of Adaptation to Climate Change while Dr. Ashok Khosla, Director of Development Alternatives, Delhi spoke on Technology and Institution for Adaptation to Climate Change. Chaired by Dr. Saleemul Huq of IIED, the Second Technical session was addressed by Ms. Claudia Schaerer, Project Coordinator, RVCC Project, CARE, Bangladesh, Mr. Nguyen Ngoc Thien, Vice Chairman of People's Committee, Thua Thien Hue Province, Vietnam, Brett Orlando, IUCN, Switzerland, Dr. Farhana Yamin, IDS, University of Sussex and Dr. Ainun Nishad, Country Representative, IUCN Bangladesh. Ms. Schaerer spoke on Reducing Vulnerability through Awareness, Action and Advocacy; A Grassroot Adaptation Project being implemented in Southwest

Bangladesh while Mr. Nguyen spoke on "Benefits and Provincial Initiatives and Commitment for Adaptation to Climate Change: CACC Project". Dr. Nishad highlighted on the Strategies for Adaptation to Climate Change with Focus on Water Sector.

The third session on "Adaptation in Practice" was chaired by Dr. Murali Lal, Professor of Centre for Atmospheric Science. Indian Institute of Technology while presentations were made by Mr. Taito Nakalevu, Climate Change Adaptation Office, SPREP, Samoa; Dr. Pablo Suarez, Research Assistant, Boston University, USA; Dr. Molly E. Hellmuth, Scientist, UNEP-RISO, Denmark; Mr. Elike Van Sluis, Red Cross/Red Crescent Climate Change Centre, The Netherlands.

Dr. Atiq Rahman chaired the fourth session on "Community Responses in the morning of 17 January. Ms. Rosa T. Perez, Climatologist, PAGASA, Philippines spoke on Community-based Flood Risk Management in Pampanga River Basin. Other experts from Bangladesh, India and Vietnam highlighted their experiences with community on flood and drought management issued.

Concluding Session

The concluding session focused on lessons learnt and way forward. Mr. Tariqul Islam, Minister for Environment & Forest of Government of Bangladesh was the Chief Guest in the concluding session held on 18 January in the morning. The Minister in his speech emphasized that Bangladesh would be most vulnerable to global climate change impacts and he urged the global communities to help the country to develop capacity at the national and community levels to build preparedness to adapt with the climatic events better. Dr. Saleemul Huq chaired the concluding session.

Dr. Huq said, "Although the recent Tsunami in the Indian Ocean was not linked to climate change, its impacts on some of the poorest and most vulnerable communities along the coasts have highlighted the

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vulnerability of these communities (and others like them around the world) to the potential adverse impacts of climate change in future.” Richard Klein from the Potsdam Institute for Climate Research in Germany highlighted the need for enhancing knowledge of adaptation through learning from practice. Barry Smit from the University of Guelph in Canada stated that the impacts of climate change will affect not only the vulnerable communities in the developing countries but also those in the developed countries and gave the example of the Inuit in Canada who claim to be observing adverse climatic changes already. Farhana Yamin from the Institute for Development Studies (IDS) highlighted the need to focus more on adaptation in the international negotiations on climate change and also the need to link climate change with development. She announced the setting up of a web-based network for Linking Climate Adaptation by the IDS to keep researchers, policy makers and practitioners in touch with each other. Prof. Murari Lal highlighted the need to share messages to the communities on solid science. Atiq Rahman from BCAS said that often local level communities have long-established coping strategies for climate variability, “the challenge is for researchers to learn from the local knowledge and provide further advice based on established practices rather than inventing new ways of doing things” he said. Ain un Nishat and Brett Orlando from IUCN highlighted the need to find ways to learn from local communities and find ways of providing them with scientific knowledge and information in a manner that helps them deal with climate as well as other stresses and impacts.

The workshop concluded with some shared lessons. These include: the need to identify the communities most at risk; to find ways of reaching and interacting with them (including using local languages and non-written means of communication such as folk songs, posters, etc); the need to simplify the messages while ensuring that they are based on credible science; the need for researchers and practitioners at the grass roots to

work with and learn from each other; the need to strengthen adaptive capacities of local level communities, not only to adapt to future climate change but also to deal with current

climate variability as well as other stresses; the need for the voices and experience of the local level communities to be heard at national and international policy making forum.

- S. Huq & D. Mallick



Dr. Atiq Rahman, Executive Director of BCAS speaking in the concluding session of the 3-day workshop. Dr. Youssef Nassef of UNFCC and Dr. Anil Gupta of CIDA, Canada are seen in the dais.

Box-1: Community Adaptation to Flood Disaster

The Reducing Vulnerability to Climate Change (RVCC) Project is an initiative to learn from community and enhance their capacity to reduce risks of climatic events like floods and cyclones. The RVCC Project is working in six districts in south-western Bangladesh – Bagerhat, Gopalganj, Jessore, Khulna, Narail and Satkhira – through partnerships with local organizations and communities. The goal of the project is to increase the capacity of the local communities to adapt to the adverse effects of climate change. The project raises awareness on climate change issues and adaptation to climatic as well as environmental changes that could be exacerbated by climate change. The project is training local partner organizations to work with several Union Parishads (lowest tier of elected government) and community leaders to increase their awareness on climate change impacts and to develop community-level adaptation strategies.

The BCAS component of RVCC has been working in floodplain in Gopalganj to understand the level of vulnerability of the local people to flood and develop responses for the community. The project with local community is trying to improve local responses strategies through awareness, flood preparedness and promotion of livelihoods in relation to flood impacts. During the devastating flood of 2004, the project staffs observed the community responses and worked with them to reduce flood risk by mobilizing community with flood preparedness efforts in project villages. It was learnt from field observations and consultations that the community people take measures for protection of house and homestead, agriculture, fisheries and livelihoods; preserve food, water and fuel and cooking; take care of children, women and old people. The community utilized their social capital and networks to take flood preparedness and reduce vulnerability to flood disaster in the project villages.

Population, Poverty and growing Inequality

The world has now over 6 billion people. Of them, about 3 billion live in poverty and more than one billion of them live in extreme poverty. The majority poor people live in four regions including: South Asia, Africa, Eastern Europe and Central Asia, Latin America and the Caribbean. South Asia and Sub-Saharan Africa are the homes of millions of poor and most of them are extreme poor. The tropical and subtropical regions are rich in natural and bio-resources. It implies that poor and marginal group of people in the planet have developed an interdependency relation with nature, where nature and ecosystems give the poor subsistence with food, fiber, water, medicine and fodder. The nature generates various livelihood support services for people for long time while the poor protects and conserve the nature. However, it is also blamed that poor also degrade nature, but they harm the nature for their mere subsistence only.

One of the key successes of the UNCED process was the acknowledgement of the need for integrating environment, development and social justice giving rise to the concept of sustainable development. The Global Forum of Environment and Poverty (GFEP) and few other groups were actively highlighting the need for integration of poverty issue as a central concern in sustainable development framework. The GFEP asserted that there can be “no sustainable development without eradication of poverty.” Many discourses and policy advocacy on poverty issues were held at different levels. The Millennium Development Goals (MDGs) has declared to “halve the proportion of the world’s poor and the proportion of people who suffer from hunger by the year 2015”. After 10 years of UNCED in 2002, the Plan of Implementation the World Summit on Sustainable Development (WSSD) has emphasized on poverty alleviation as a cross cutting issue. However, poverty has many complexities and it is difficult to eradicate poverty.

Poverty, Development and Conservation Linkages

There is an inextricable linkage between the poverty, development and

environmental conservation. These linkages are multidimensional and complex and these cannot be explained in a simple way. A simplistic argument is that poor exploit the natural resources and thus degrade the ecosystems. But very often the commercial interests of the rich backed by the power elites and politics enhance this process of over exploitation. On the other hand, in many cases, the poor conserve nature through sustainable uses of the natural resources, but there is a serious lack of understanding and consensus among the different actors including the policy makers that the interests of the poor and of environment are mutually compatible. Ambivalence about this relationship exists among those whose prime concern is environment as well as among those most concerned with poverty eradication.

Poor through their self-development sometimes reduce poverty. But they need some facilitation, institutional supports and mobilization of their own strengths and resources. There are many instances across the world, particularly in South Asia and Africa that poor are effectively involved in income generation and enhancement of their livelihood options, once they are mobilized, organized and given opportunities to prove their creativity. NGOs played a key role in this process in Bangladesh. Further, the poor farmers of Bangladesh have performed a miracle by producing rice and vegetables and feeding the population, which has nearly been doubled since independence in 1971. Presently Bangladesh is approaching to rice self-sufficiency though not food security. There are some emerging good experiences across the developing countries, where poor are engaged in nature conservation and enhancement of their livelihoods. For example water resources and fisheries management by poor in Bangladesh and forestry resources management in Nepal.

The Bangladesh Centre for Advanced Studies (BCAS) is committed to in south central Bangladesh natural resources management, eco-system regeneration and sustainable development of the country and the region. BCAS initiated an advocacy programme at *Chanda Beel*, to involve people in the sustainable management of wetland resources. The central objective of the project is to build environmental awareness and to encourage pro-active solutions to problems by local NGOs, local government and resource users with a view to developing mechanisms by which these groups might better communicate. A people’s participatory wetland management plan (PPWMP) has been developed by BCAS in conjunction with local stakeholder input over the course of the project. It is evident from a participatory assessment of the programme that people of the surrounding villages of the beel have greater understanding about the causes and trend of the degradation of natural resources (fish, snails, birds, aquatic vegetable etc.) of the beel. They are well aware of their environment and usefulness of the resources base for both natural system and human existence. The BCAS-SEMP (Sustainable Environment Management Programme) initiative with IUCN-Bangladesh, UNDP and government of Bangladesh has successfully engaged the poor and women in wetland resources conservation and livelihood promotion in Modhu Mati Floodplain. ❀

- *Rahman A and Mallick D*



A poor women grew lots of Vegetable on a floating garden during monsoon flood
— Source BCAS

Workshop on Renewable Energy held: *New Investment Opportunity in Climate Fund*

In a national workshop, Mr. Iqbal Hassan Mahmood, the State Minister for the Ministry of the Power, Energy and Mineral Resources of GoB, said that the Clean Development Mechanism (CDM) offers a great opportunity for Bangladesh to earn significant amount of external resources for investment in the energy and environment sector. He was speaking as Chief Guest in a national workshop on renewable energy in Dhaka on 1 June 2005. The experts said that the size of such investment would depend on our preparation and enabling government supports as well as sound technical proposals in energy efficiency and renewable energy sector. The NGOs and research community can help the government and the private sector in developing the capacity of the country and good proposals for investment.

This was expressed in a two-day National Training Workshop on Awareness Building and Motivation for "Promotion of Renewable Energy, Energy Efficiency and Greenhouse Gas Abatement (PREGA)", which started in the morning today at the LGED Bhaban, Sher-e-Bangla Nagar in Dhaka. Supported by the Asian Development Bank (ADB), the workshop was organized by Bangladesh Centre for Advanced Studies (BCAS), an independent research and policy institute in Dhaka.

Chaired by Dr. A Atiq Rahman,

Executive Director of BCAS, the inaugural session of workshop was attended by over hundred participants representing relevant government departments, key private enterprises involved in energy sector, NGOs, research organizations and international development agencies working in Bangladesh. Dr. M Eusuf, Senior Fellow of BCAS and Team Leader of the PREGA project gave the keynote speech in the inaugural session. Mr. Samuel Tumiwa, Energy Expert of ADB also spoke in the occasion.

The Minister, in his speech, appreciated the new financial mechanism under the Kyoto Protocol of the UN Framework Convention on Climate Change (UNFCCC) and the CDM projects, which give enormous opportunities for Bangladesh. He also called upon the private sector, NGOs and the relevant agencies to take the emerging opportunity and assured the necessary cooperation of the government in this regard. Dr. M Eusuf, in his keynote speech said that promoting investment in



Mr. Iqbal Hassan Mahmood, State Minister, Ministry of Power, Energy and Mineral Resources, GoB is delivering the inaugural speech in the National Training Workshop. Dr. Atiq Rahman, Executive Director of BCAS with others are seen in the dais.

PREGA and CDM technologies would increase access of the poor and marginal people to energy services and enhance their livelihoods as well as reduce GHG emission.

Dr. Atiq Rahman gave an overview of the global decision making process in the UNFCCC and explained why CDM projects are important for Bangladesh to tap resources from the developed industrialized countries and to invest in energy sector in Bangladesh. He hoped that this would help us to meet the commitment under UNFCCC as well as to foster socioeconomic development and poverty alleviation in the country through

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Severe Drinking Water Problems in fringe Areas of Bangladesh

contaminated with iron. The HTWs go under water in the village in the rainy season during flood and the suffering of the villagers knows no bound at that time.

The survey says that only 7.9% households have their own hand tube-wells in all the villages across the study villages in five regions. Another 15% families depend on neighbors' tube-wells in the villages for collecting drinking water. The use of deep tube-wells by the villagers for drinking water collection is around 11%. It is notable that still 30.2% of the surveyed household use unsafe water for drinking such as from pond (11.4%), river/khal (18.6%) or lake (0.2%) in the study villages.

The survey further collected perceptions of the community people regarding safe drinking water and this gave interesting results. The perceptions about safe drinking water vary from region to region. For example, most of the respondents at the villages of Gaibandha and Rajshahi have opined that fresh water of tube-wells is safe water. They are not much aware of

arsenic and iron in ground water. They tend to make this argument as they have this option to see fresh water in it. Again, most of the respondents of the project village in Gopalganj opine that arsenic-free water is safe water as because they have come to know that their tube-wells are affected with arsenic contamination. Arsenic with higher concentration is the poison that is harmful to their health. They also feel that water of deep tube-wells is safe for drinking. The respondents at the village in Bagerhat by and large argue that rainwater is safe water as they have seen it fresh compared to the water can be collected from other sources that they can avail (river and pond in the locality). A notable number of respondents in Rangamati treat water of ring well and tube-wells as safe water for drinking purpose. They have also mentioned water of *Patkua* as safe water for drinking.

Based on the baseline information regarding various sources of water, problems faced mainly by the poor and women in relation to collection and preservation of safe drinking water and

their needs, the action research have initiated various collective actions in the five villages involving multiple actors including local government bodies, relevant public agencies and NGOs, where community people, particularly the poor and women play a key role in determining their water security for long time. The project has undertaken awareness campaign on safe drinking water, motivation for using safe water sources for drinking purpose, demonstration of good options for safe drinking water and building local institution of the poor called Pani Parishad (water council). However, the project has been a very small initiative compared to the huge problems of safe drinking water and related health issues in the regions. Hence, there is a great need for more collective actions involving the government agencies, community people, NGOs, CBOs, development partners in Bangladesh to ensure access of the millions of poor and marginal people to safe drinking water, who are living in thousands of fringe villages in the country. ❁

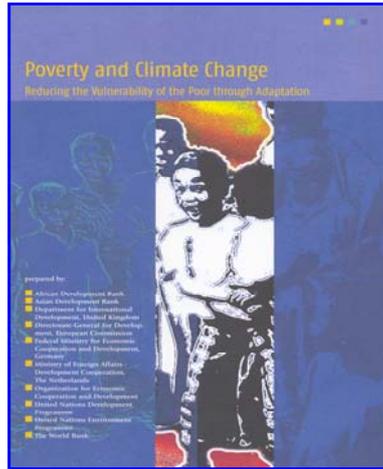
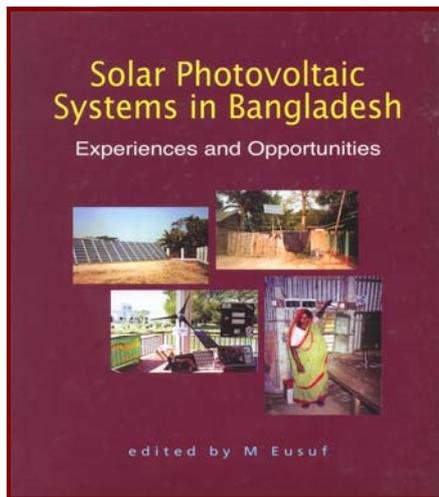
- Mallick D and Juel ASM

Publications

SOLAR PHOTO-VOLTAIC SYSTEMS IN BANGLADESH: EXPERIENCES AND OPPORTUNITIES,

edited by M. Eusuf. Jointly Published by Bangladesh Centre for Advanced Studies (BCAS) & The University Press Limited (UPL) Dhaka with support from Winrock International and German Technical Cooperation (GTZ); Price Tk. 650.00.

This volume brings together the presentation, dialogues, open discussions and a consensus report on recommendations. In a span of 22 chapters, this book records the present progress and proposes future steps to be taken for popularization of the use of solar energy in Bangladesh. This volume will also serve as a compiled reference and provide some food for thought to those who are engaged in research, development and dissemination of solar PV technologies.



POVERTY AND CLIMATE CHANGE Reducing the Vulnerability of the Poor through Adaptation

This document has been written by a team representing ADB, AfDB, BMZ, DFID, DGIS, EC, GTZ on behalf of BMZ, OECD, UNDP, UNEP, and The World Bank.

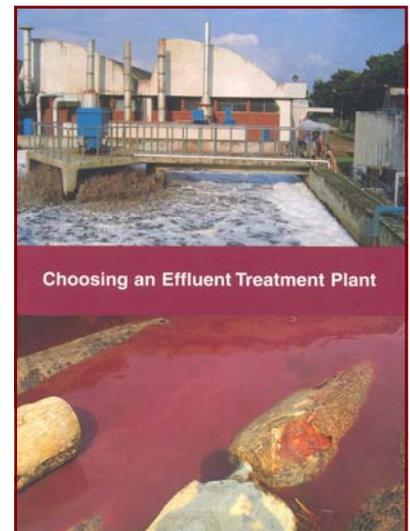
This paper focuses on the impacts of climate change on poverty reduction efforts in the context of sustaining progress towards the Millennium Development Goals (MDG) and beyond. It discusses ways of mainstreaming and integrating adaptation to climate change into poverty reduction and sustainable development efforts. The key messages emerging from this paper are:

- Climate change is happening and will increasingly affect the poor; and
- Adaptation is necessary and there is a need to integrate responses to climate change and adaptation measures into strategies for poverty reduction to ensure sustainable development.

CHOOSING AN EFFLUENT TREATMENT PLANT

The booklet has been written by a team from the Stockholm Environment Institute (SEI), Bangladesh Centre for Advanced Studies (BCAS) and the University of Leeds, UK for the “Managing Pollution from Small and Medium-Scale Industries in Bangladesh” project. The work was funded by the UK Development for International Development under its Knowledge and Research Programme and the Government of Bangladesh.

This booklet gives a brief and straightforward introduction to effluent treatment plants (ETPs) for the textile industry. It provides valuable information on the effluent quality standards set by the Government of Bangladesh. It also outlines the basic component of ETPs. ❁



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