

## EDITORIAL

*Development and management of resources in a sustainable way requires science-based understanding of the dynamics and constraints of resources. A Workshop on fisheries sector development held in Dhaka recently identified key areas for further research and uptake for this sector. The key areas of research and implementation include: baseline understanding of fisheries resources and its contribution to livelihoods, management opportunities and development options, and mechanisms for implementation. The summary of the Workshop findings is presented as the main feature of this issue.*

*To address the overwhelming problems of environmental hazard due to the rampant use and disposal of Polythene bags in the country, the Government has taken measures to phase out its use. The Civil Society, NGOs, the general public and trading outlets have responded with vigour and joined in the social mobilization to free the country from this menace. BEN welcomes this policy shift and calls on participation from all corners.*

*Saleemul Huq writes on Climate Change, giving an update of recent international events on Climate Change and the role of Bangladesh in international negotiations.*

*This year, the World Summit on Sustainable Development (Rio+10) in Johannesburg, South Africa, will bring together all nations to review progress made on the commitments taken in the Earth Summit ten years ago in Rio de Janeiro. Preparations toward the Summit is in its final stage with the last PrepCom at Bali, Indonesia. A summary of Bangladesh's inputs are described in our feature.*

*Preparations to observe the International Environment Day on 5th June is in full swing this year. The government agencies as well as NGOs and civil society are undertaking a wide range of programs and events to stimulate and motivate awareness as well as interest among people in all corners of the country. BCAS also will observe the day through seminars and events at national and grassroot levels.* ❖

## ***Fisheries Sector Programme Development in Bangladesh Research Demands and Partnership explored***

A comprehensive and scientific understanding of the dynamics of resources base, constraints and opportunities in the sector, people's access to and dependency on it, use patterns and management approaches of the resources are required for the sustainable development of fisheries resources and improving livelihood of the poor fishers. Bangladesh Centre for Advanced Studies and Marine Resources Assessment Group (MRAG) based in UK, jointly conducted a Study recently to facilitate sustainable development of the fisheries sector in Bangladesh. The Study aimed at identifying and prioritising the regional demands for research in fisheries sector as well as to assess the synergies and linkages between research, implementing and donor agencies for effective uptake of

research findings. The Fisheries Management Science Programme (FMSP) of DFID, UK supported the Study.

As part of the Project, a two-day Programme Development Workshop was held in Dhaka recently with the aim of setting the Strategy in context of identifying demands for research with a wide range of stakeholders in Bangladesh, and the opportunity of implementing these through partnerships. The Workshop included a number of presentations given by FMSP staff to describe DFID-FMSP research agenda and set the policy context.

Presentations were also given by several representatives of Bangladeshi research institutions to describe current activities

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## **Ban on Polythene Shopping Bags A Step toward Clean Environment**

The Government of Bangladesh declared a ban on production, distribution and marketing of polythene shopping bags from 1st January 2002 in Dhaka city. The ban is being enforced in other metropolitan cities from 1st March 2002. The environmental hazards created by polythene include soil and water contamination and closing of drains and sewerage lines in and around the cities. Indiscriminate use and disposal of polythene everywhere is choking the sewage, creating pollution hazards in particular areas of Dhaka City. During monsoon, following heavy rainfall many roads and lanes become submerged for one week or more, due to blockage of the sewerage and drains by substances including polythene.

Even the Buriganga and the Sitalakkha rivers have lost their navigability and water has become toxic due to

polythene bags which are deposited in millions on the beds each day.

Since polythene is non-degradable, it remains intact in nature for many years, choking the soil from breathing. It also creates health hazards. Polythene can cause cancer, skin disease and other health problems. The food covered by polythene is harmful for health, specially black and coloured polythene shopping bags emit harmful chemicals.

Polythene came into the market for commercial use in the early 1980s and a competition between polythene, jute and paper bags ensued, soon taken over by the former. It became popular commercially more than the other bags due to its low price and portability. When people started to use and dispose

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## Climate Change after Marrakech: Where do we go from here?

The seventh Conference of Parties (COP7) of the United Nations Framework Convention on Climate Change (UNFCCC) has just been completed in Marrakech, Morocco with an agreement by all the countries to complete the ratification of the Kyoto Protocol which will set binding targets for the developed countries of the world (with the exception of the United States of America which withdrew from the Kyoto Protocol) by the time of the World Summit on Sustainable Development (WSSD) to be held in Johannesburg, South Africa in September 2002. Thus one of the most important outcomes from the Earth Summit held in Rio de Janeiro, Brazil in 1992 will have been completed with the world community agreeing to take concerted action to reduce emissions of greenhouse gases under a legally binding international treaty. This brings to a successful conclusion one of the major environmental problems facing mankind, namely global warming due to human emissions of greenhouse gases.

However, although the Kyoto protocols tremendous achievement in its own right (and there is still much that has to be done before it finally comes into force), it will

not solve the problem of global warming as it will only reduce greenhouse gas emissions by around 5% (even less now that the USA is not included) if implemented successfully, while the latest report of the Intergovernmental Panel on Climate Change (IPCC) has stated that reductions of about 60% are needed to prevent dangerous impacts of global warming. Nevertheless it represents a major step forward in the right direction and is structured in way to allow more stringent targets to be taken later as time goes on and we learn by doing.

It is time therefore to look beyond the Kyoto Protocol to other issues in the climate change convention, which are of concern particularly to developing countries (including Bangladesh). Some of the key issues still to be tackled and the possible strategy for Bangladesh are discussed below.

### Adaptation

The Kyoto Protocol deals only with the issue of mitigation (or prevention) of greenhouse gas emissions and does not address the fact that even if it is successfully implemented it will not

prevent a certain amount of climate change from occurring anyway and hence those countries (including Bangladesh) which are most vulnerable will have to cope with (or adapt to) climate change. Indeed the IPCC scientists have reported that climate change may be occurring already. Hence the issue of adaptation to climate change is of prime importance, especially to those countries, which are most vulnerable and have the least adaptive capacity (including Bangladesh). This issue of adaptation and building adaptive capacity is of importance to the developing countries as they will suffer from problem that they have not created and hence there is a moral responsibility on the part of the developed countries (who are primarily responsible for the problem) to compensate those that will have to suffer through no fault of their own. This responsibility has already been acknowledged and a Climate Change Fund has been created (together with a special fund for the Least Developed Countries or LDCs) to help those developing countries which are most vulnerable. The future strategy for these countries (including Bangladesh) must be to get these funds to

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polythene randomly, and with no effective disposal system, the environmental consequences led to worsening the situation. Next, in-course of time, when the situation became unbearable, the necessity arised for social movement to control the situation. Considering the rapid environmental degradation due to polythene, the NGOs and civil societies including teachers and students of schools, universities have been organizing workshops, seminars, campaigns, human chain and rallies against use of polythene bags.

With the expansion of demand and use of polythene, polythene bag producing factories were established in a large scale over the last few years. As the factory owners invested substantive capital in this sector, they tried their best to stop ban of polythene and continue their business. They argued that hundreds of people will lose their jobs which will create a heavy pressure on their livelihoods. But the government did not withdraw their decision this time.

Mr. Shahjahan Seraj, the Minister for Environment and Forests stressed the need for alternative measures and initiatives that would be taken by interested entrepreneurs to fill up the gap resulting from ban on polythene. He

## Ban on Polythene Shopping Bags

urged the jute, paper and cotton bag producers to come forward to fill the vacuums. He hoped that if they invest more capital in this sector, the unemployment crisis arising from ban on polythene production sector may be reduced.

Different professional and environmental activist groups appreciated and welcomed

the government decision banning polythene shopping bags. The people around the country responded wholeheartedly to the government's decision. The shop keepers and buyers also came forward and joined in implementing the ban. ❖

*- G. Jilani*



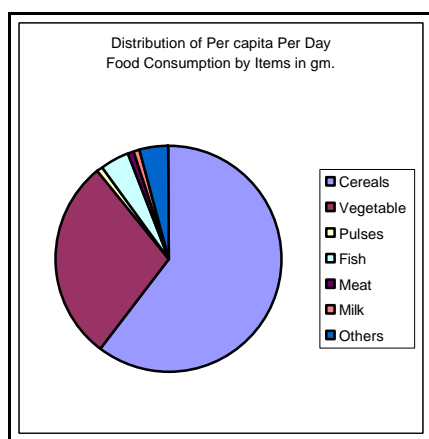
*Piles of waste polythene bags are seen at a dumping site. This was a very common picture in Dhaka a few months ago, before the ban on use of polythene bags. Source : BCAS Image Bank*

## Food Consumption, Nutrition and Gender Inequality Scenario in the Southwest of Bangladesh

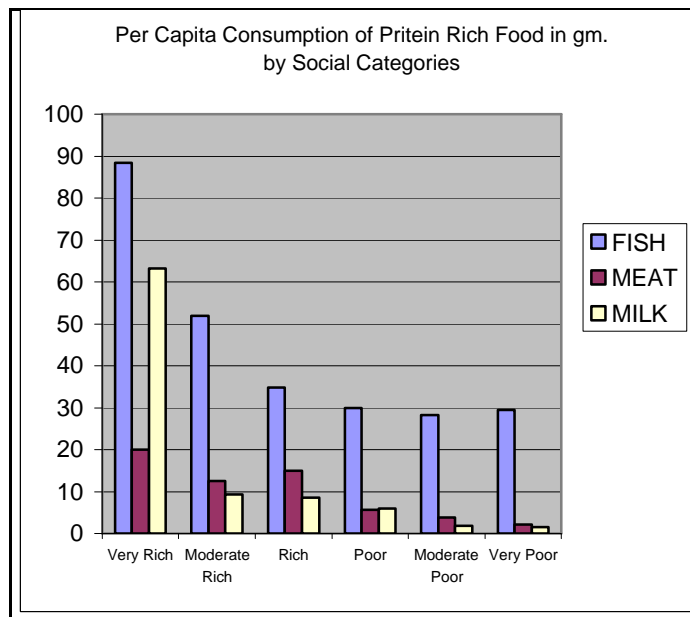
A study on food consumption of some selected villages in Khulna and Satkhira found that people, particularly the poor section of the society suffer from food insecurity and lack of nutrition. The study was conducted as part of the social feasibility assessment of Fourth Fisheries Project (FFP) implemented by the Government of Bangladesh with assistance from UK-DFID and the World Bank. The study employed multiple approach and methods to understand food consumption patterns, nutritional value of food consumed by the male and female from all social categories including poor, marginal, middle class and rich. A set of trained field researchers collected detailed information on food consumption in 761 households. Samples were taken proportionately from each wealth categories. In-depth interviews and focus group discussions (FGD) were conducted to gain comprehensive understanding of the issues from both class and gender perspectives.

### Nutritional Value of Food

The survey reveals that people of the study villages consume 753 gm of food per day per capita and cereals constitute a major portion of the food items (454 gm i.e., 60%), followed by vegetable and roots (218 gm). They also take little amount of fish and pulses. The value of the calorific 753 gm intake has been calculated as 2038 Kcal, which is lower than national average of 2244 kcal



(BBS, 1998). The low consumption of food by the surveyed people might be caused by their poverty i.e., 79% of them were poor (randomly but proportionately selected from different wealth categories). Figure - 1 shows the percentage distribution of



different items of food consumed by the surveyed people of southwest Bangladesh.

It was revealed that the respondents also consume very little amounts of sugar, molasses, eggs, fruits and edible oil, particularly the consumption of fruits and other items of food have been extremely low in the study areas. They mentioned that the low consumption of meat, milk, eggs and fruits is caused due to lack of fruit trees and decline of poultry and livestock in the area.

### Food Consumption by Wealth Categories

The survey shows that the rich people consumed greater amount of food compared to the middle categories and the poorer sections of the population. The rich people consumed at total of 952.56 gm of different food items per capita per day while the poor consumed only 723.9 gm. The rich people consume greater amount of protein-rich food while the consumption of food items such as meat, egg, milk etc. is very low among the poor. The very poor consumed on an average of 2.1 gm and 1.6 gm of meat and milk per capita per day respectively as against 20 gm and 63 gm meat and milk

consumed by the rich.

### Food Consumption by Age and Sex Groups

The study found significant inequality in food consumption between male and female across all the age groups except the adolescent boys and girls. The data indicates that the adult males consume the highest amount of food (915 gm) which was followed by the adolescent boys i.e., 878 gm per day per capita. The adult female consumed the third highest amount of food i.e., 814 gm followed by adolescent girl i.e., 810 gm per day per capita. The average per day per capita consumption of children between 5 - 9 years was 483 gms for male child and 442 gms for female children. There has been sharp inequality in consumption of fish, meat and milk between males and females across all age groups. The adult males and boys consume the greater amount of protein and vitamin rich food, which is justified by the patriarchal values and family practices. As a result, the females are victims of lack of food, malnutrition and ill-health. The difference in terms of food consumption, nutrition and gender inequality is significantly higher among the very poor section of people in the society.

- Sadeka Halim

# Fisheries Sector Programme Research Demands and

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in the context of Bangladesh. Beside the inaugural session, the workshop was divided into different plenary and working sessions. The second session focussed on FMSP's strategy for interventions in inland capture and enhancement fisheries in Bangladesh followed by working sessions which concentrated on identifying fisheries research demands and regional partnerships for effective uptake of research findings and implementation of projects. The workshop ended with a concluding plenary.

Over 60 delegates attended the inaugural sessions whilst a total of 35 participated in the workshop sessions. Participants included fisheries managers and those with a broad interest in fisheries and wetland management. A number of institutions were represented including national and regional government departments, e.g. Department of Fisheries, Water and Agriculture, NGOs, research organisations (including universities), donors, representatives of key projects and relevant consultants in the sector.

### Inaugural Session

Mr. Sadek Hossain Khoka, Honourable Minister, Ministry of Fisheries and Livestock was the Chief Guest while Dr. Z. Karim, Secretary, Ministry of Fisheries and Livestock, chaired the inaugural session. Dr. M. Eusuf, Senior Fellow of BCAS opened the workshop and in his welcome address highlighted the

importance of fisheries to peoples' livelihoods. Dr. Chris Mees of MRAG presented DFID's policy for fisheries research and the FMSP's aims for the current workshop.

Dr. Neil MacPherson of DFID presented fisheries in the wider DFID context in Bangladesh and informed that DFID had a high commitment to research on poverty elimination, people's participation and natural resources management. Knowledge is recognised as an international public good, and it is likely that DFID will provide more investment for research in the future.

The overall DFID research strategy focuses on:

- Increasing emphasis on uptake of existing knowledge rather than generation of new knowledge;
- Increasing emphasis on investment in developing country institutions to enhance their capacity for research;
- Demand-led Research, particularly on the needs of the poor; and
- Exploring research areas and their impacts on policy.

The Minister in his speech termed the workshop very timely and emphasised on the importance for sustainable development of fisheries in Bangladesh. He stated that fisheries contribute 6% of GDP and 66% of the annual protein for the population of Bangladesh. The major waterbodies, once unique habitats

of fish and aquatic animals and plants, are degrading and the production of fish has greatly decreased in the recent years due to mainly ill-conceived human interventions. Many local species of fish have been threatened and few are disappearing. The causes of degradation of fisheries and wetland are to be studied scientifically for immediate remedies. He also noted that there is a need for undertaking more programmes to improve the situation through enhancing true people's participation in resource management and re-distribution of benefits. He sought further co-operation of DFID and other development partners for balanced development of this sector.

Referring to the research agenda for Bangladesh, Dr. Karim emphasised that while there was a trend towards more socio-economic studies, technology-focussed research remain important. He considered it was important to examine previous research outputs, and to understand the factors involved in encouraging adoption, so that outputs are not simply shelved. In developing a research agenda within developing countries, he stressed that it is also important to look into institutional capacity and skill requirements to ensure successful uptake of project outputs. With respect to demand assessment, he highlighted that these should be based on the strategic needs for development of the country, including grassroots demand, and referred to various existing studies for Bangladesh, including an up-coming sector review. Discussing linkages for improved research uptake, Dr Karim noted that the current policy of the Government of Bangladesh was to work closely with the NGO sector, and indicated that there was a need to develop effective public - private partnerships.

### The Working Sessions and Workshop Outcomes

Presentations given at the workshop served to set the scene for subsequent working group sessions. The first working group session had one task common to four working groups: to prioritise research needs. A synthesis of the ranked priorities generated by the different groups and refined during a plenary discussion indicated a number of research areas consistent with the FMSP strategy. Various entry points for research were identified that contribute to strategies for sustainable livelihoods, encompassing:



Dr. M. Eusuf, Senior Fellow BCAS addressing the participants in the inaugural session, while Mr. Sadek Hossain Khoka, Minister, Fisheries and livestock is seen with Dr. Chris Mees of MRAG and Dr. Z. Karim, Secretary MoFL

# Development in Bangladesh Partnership explored

## Feature

### Fisheries and Livelihoods

- Baseline understanding of fisheries resource and contribution to livelihoods;
- Impact of external factors on fisheries and livelihoods (particularly flood control);

- Impact of fisheries enhancement on indigenous species and livelihoods;
- Alternative livelihood strategies;

### Pro-poor Management Opportunities

- Investigation of alternative management strategies for maintaining fish stocks and

enhancing the livelihoods of the poor;

- Investigation of alternative strategies for enhancing natural stocks to benefit the livelihoods of the poor (technical, institutional, and financial mechanisms);

### Mechanisms for Implementing Pro-poor Management

- Improving access of the poor to fisheries;
- Alternative institutional arrangements for fisheries management that benefit the poor; and
- Mechanisms for dissemination and promotion of new knowledge.

Specific topics were defined which describe potential research projects under these theme areas. The second working group session related to partnerships and mechanisms for promoting uptake of research outputs. The key outputs of the working sessions are summarised in the Table.

### Conclusion and Way Forward

The workshop resulted in a first-order assessment of research priorities. Whilst significant emphasis was expressed by participants relating to baseline understanding of resources, there was a general consensus that this needed to be placed in the context of sustainable livelihoods. In particular, participants considered that improving mechanisms for communication and promotion of research outputs was important. The priority research areas defined aligns with the FMSP strategy, though specific research areas still need to be fully developed. Discussion on partnerships led to some useful observations, though not all of these could be directly addressed through the FMSP.

In his closing remarks, Dr. Ain-un Nishat, Country Representative of IUCN-Bangladesh, who chaired the concluding session, stated his satisfaction to note the references to indigenous fish species throughout the discussions, and also the need for an integrated approach to water management. He re-emphasised the need to make the most of existing sources of information, including indigenous knowledge, and the importance of networking in order to share information, particularly between researchers and policy makers. ❖

**Table 1: Synthesis of Research Demands for Fisheries Sector in Bangladesh expressed by Working Groups**

Research Theme	Ideas expressed during the Workshop as Priority
<b>Activity 1: Natural resources and their contribution to livelihoods</b>	
<b>Baseline understanding of fisheries resources and contribution to livelihoods</b>	Baseline surveys of the natural and physical resources (including hydrological factors)
	Biology and ecology of resources (including migration and reproduction)
	Stock assessment and habitat carrying capacity
	Livelihoods appraisal: contribution of fisheries to livelihoods, understanding access rights, and the current legal framework
<b>Impacts of external factors on fisheries and livelihoods</b>	Impacts of agro-chemicals and industrial pollution
	Impacts of flood control schemes
	Impacts of salinisation on the Sundarbans
	Impacts of climate change
<b>Impacts of enhancement</b>	Impacts of stocking (of exotic species) on indigenous species
	Impacts of stocking on livelihoods (including benefit distribution)
<b>Alternative livelihood strategies</b>	Alternative income-generating activities for fishers
	Coping strategies of fishers with seasonal fluctuations in the fishery
<b>Activity 2: Management Opportunities and Development Options important to the Poor</b>	
<b>Investigation of the most effective management strategies for maintaining natural stocks and enhancing livelihoods of the poor</b>	Assessment of the impacts of alternative management strategies (eg fish pass, sanctuary, closed seasons, gear controls) on resource status, and identifying those which benefit the poor
	Development of criteria for effective fish sanctuaries
<b>Investigation of the most effective management strategies for enhancement of natural stocks and enhancing livelihoods of the poor</b>	Identify technical, institutional and financial mechanisms for enhancing fish stocks important to the livelihoods of the poor, including endangered and indigenous species (through habitat restoration and/or stocking)
<b>Activity 3: Mechanisms for Implementing Pro-poor Management</b>	
<b>Improving access of the poor to fisheries</b>	Identifying appropriate access rights to fisheries for different groups of people, particularly the poor, and defining the legal framework required to protect and enhance the rights of fishers
	Understanding issues of conflict in fisheries/wetland management (and mechanisms to mitigate against them).
<b>Methods for improved institutional support for fisheries management.</b>	Investigation of alternative institutional arrangements for fisheries management that benefit the poor
	Raise awareness of management issues amongst stakeholders through participatory action research.
<b>Mechanisms for dissemination and promotion of new knowledge</b>	Mechanisms for communicating ideas to policy makers
	Pilot implementation studies

For more information please visit the following Website: <http://www.mrag.ic.ac.uk>

-D. Mallick

## Ten Years After Rio: The World Summit on Sustainable Development (WSSD) and Bangladesh

Sustainable Development is what meets the needs of present without compromising the ability of future generations to meet their own needs. Ten years ago in 1992, during the United Nations Conference on Environment & Development (UNCED) at Rio de Janeiro, leaders of the world made commitments toward achieving sustainable development. This year, to mark the tenth anniversary of the Rio Commitments and assess how far we have made progress, the World Summit on Sustainable Development (WSSD) or Rio+10, is being held in Johannesburg, South Africa from 26 August to 4 September 2002.

### Role of Government

A Preparatory Committee (PrepCom) was established to prepare the substance for the Johannesburg Summit and four PrepCom Meetings are being held. PrepCom III was held recently in New York (25 March to 5 April, 2002), where the Bangladesh Delegation, led by Mr Sabiuddin Ahmed, the Secretary, Ministry of Environment & Forests, who presented the Country Statement. This statement was developed following a series of meetings that included BCAS inputs and took place among the Government, NGOs, scientists and Civil Society experts and representatives, and a series of papers were drafted on the country's progress since Rio and achievements to date. Meetings in several districts were organised by the Ministry and FEJB. Bangladesh Unnayan Parishad (BUP) organised a comprehensive 3 day workshop (16-18 March) which addressed the key themes such as local government and good governance, technological issues in sustainable development, empowering women and child issues, agriculture and food security, energy, private-public partnership, urbanization, biodiversity and natural resources management, integrated water resources management, climate change, managing natural disasters, etc., to assess the progress toward sustainable development in Bangladesh.



### Role of Civil Society

As during the preparations for the Earth Summit in 1992, BCAS again has played a leading role in the national and regional preparations toward the Johannesburg Summit. Dr Atiq Rahman, Executive Director, BCAS was a member of the team which drafted the NGO South Asian Perspectives on WSSD in Sri Lanka held in September last year. Earlier he participated in the wisemen meeting on WSSD preparation for South Asia, held in Bangkok in August last year. In addition, Dr Rahman was also invited in March this year by IUCN Headquarters, Switzerland, to contribute to their preparations for WSSD.

BCAS believes that the hopes that Sustainable Development would build new bridges between the North and the South or between Governments and Civil Society remain largely unrealised. Further, in spite of the fact that the Global Civil Society has grown in size and achieved many successes at local level, they continue to be distanced from the locus of global decision making.

BCAS will participate in the PrepCom IV, the final in the series, to be held in Nusa Dua, Bali, Indonesia from 25 May to 7 June, 2002.

As a member of the Regional and

International Networking Group (RING), an alliance of policy research organizations from all continents, BCAS endorses the RING Statement on WSSD, which was launched earlier this year in January. This Statement is available from the RING Secretariat at International Institute for Sustainable Development (IIED), London, UK. Those who are interested in Bangladesh may contact BCAS for copies of the RING WSSD Statement. BCAS also is planning several side events and actions at the Johannesburg Summit, with its international network of partner institutions. More news on these events and BCAS's role and program for WSSD will be available in the BCAS website ([www/bcas.net](http://www/bcas.net)) in future.

With much to be done to safeguard our common future, It is hoped that the Bangladesh Delegation, both NGOs and the Civil Society, will contribute further to the WSSD process through its participation in the PrepCom IV and other events, at the national, regional and global levels.

For details on the Country Statement presented at the PrepComs and other preparatory activities in Bangladesh, please contact email address of SEMP/PMU and MOEF. For official information on WSSD, visit <http://www.johannesburgsummit.org> ❖

- N. Haque

## Semonars/Workshops

### ASLPP Meeting

Bangladesh Centre for Advanced Studies (BCAS) organized the *Third Meeting of South Asia Sustainable Livelihood Policy Forum (SASLPP)* on March 24, 2002, held at the auditorium of LGED. Principal Secretary to the Prime Minister Dr. Kamaluddin Siddiqui attended the meeting as Chief Guest at the inaugural session, presided by Dr. Atiq Rahman, Executive Director of BCAS.

Prof. John Soussan of the University of Leeds, UK presented a keynote paper and outlined the main features of improving Policy-Livelihood Relationships in South Asia. It is a project jointly implemented by a group of researchers in partnership with a number of research organizations in the region with support from the Department of International Development (DFID), UK. The study focuses on three key areas including water resource management in Bangladesh and India, participatory forestry in India and Nepal and Integrated Coastal Zone Management (ICZM) in Bangladesh and Sri Lanka. The speakers at the meeting underscored the need for administrative reforms, decentralization and community based organizations to improve access to livelihood assets and reduce vulnerability of rural poor in South Asia.

### Talk on Destruction of Environment

In collaboration with International Training Network (ITN) and Centre for Environmental and Resource Management (CFRM) and Buriganga Bachao Andolan jointly organized a seminar on *Destruction of Waterbodies and Environmental Catastrophes*, on March 13, 2002 at ITN conference room in Dhaka. Water Resources Minister LK Siddiqui addressed the inaugural session as chief guest, while Prof. Muzaffar Ahmed, Convenor of the Buriganga Bachao Andolan was the chair, while Prof. Jamilur Reza Chowdhury, Vice Chancellor of BRAC University as special guest. The Minister said the government was formulating a National Water Management Plan to solve the problems of rivers dying down as per nature's laws. Prof. Jamilur Reza Chowdhury said political will and commitment was necessary to save water bodies. ❖

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## Climate Change after Marrakech

be enlarged and get access to them to help the countries adapt to climate change.

### Clean development mechanism

The Kyoto Protocol allows the developed countries that are unable to meet their entire greenhouse gas emissions targets domestically to purchase such reductions from other countries (including developing countries). The mechanism under which such trading of greenhouse gas emission reductions (called Carbon Emission Reductions or CERs) can take place is called the Clean Development Mechanism or CDM, which will enable developing countries to take advantage of the fact that their emissions are relatively low and trade emission reductions to the developed countries. Already several hundred million dollars worth of trades have been done. Bangladesh needs to be able to take advantage of this CDM to attract investments in clean technologies into the country.

### Developing country targets

Under the Kyoto Protocol the developing countries do not have to take on any emission targets for the time being (namely for the First Commitment Period which runs till 2008-2012). After that time it is expected that even the developing countries must take on some share of emission reduction targets. However the basis of allocating such targets has still to be negotiated and agreed and will require a great deal of horse-

trading. From Bangladesh's perspective it is most important to ensure that whatever target setting strategy is undertaken for the developing countries the principle of equity be established as its basis. This will mean in particular that every citizen of the planet earth should have an equitable share of the right to pollute the global atmosphere. Then if any country takes more than its allocated share then it must purchase further rights from those countries who do not use their full share. If this can become the basis for allocating shares to the atmosphere then for Bangladesh with its high population and extremely low emissions (less than 0.1% of global emissions) will have a huge unused allocation with which to trade. Potentially this could amount to billions of dollars, which would dwarf all the aid we get at present. However realistically it is likely that such per capita emission rights may not be the only basis for allocations of targets to developing countries-nevertheless it is a fight worth making as we can potentially reap major benefits from it.

### What can Bangladesh do now?

The climate change negotiations have moved into a new era with the adoption of the Kyoto Protocol and Bangladesh needs to develop a strategy for being able to take advantage of these new avenues that are opening up. The first thing it needs to do is to recognise that climate change is not just a long term environmental

problem but actually a development problem in the short and medium term as well. This will require for the country to develop a strategy for tackling the problem on a number of fronts including both domestically as well as internationally. Domestically it needs to first develop an understanding of where the impacts of climate change are likely to be most severe and make arrangements for adapting to such impacts. It also needs to develop opportunities for enabling the Bangladeshi private sector to take advantages of new investment opportunities such as the CDM. At the international level it needs to build strong team of experts and negotiators headed by a senior political or diplomatic figure that can play a leadership role in the international negotiations. This should be targeted specially at the LDC group of countries where Bangladesh has the potential to play a leadership role on their behalf. It is important to note that climate change is a relatively long-term problem and will remain with us for many years to come so the solutions will also not come quickly. Thus we need to develop a strong, relatively long-term strategy to deal with the problem including at home and abroad. If done intelligently Bangladesh can both reduce the amount of harm climate change can cause the country as well as take advantage of opportunities (specially new funding opportunities), which will become available under the climate change window. ❖

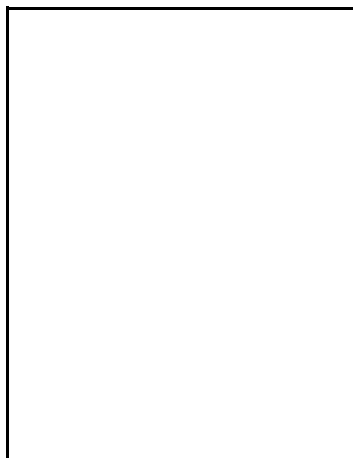
-Saleemul Huq

## Publications

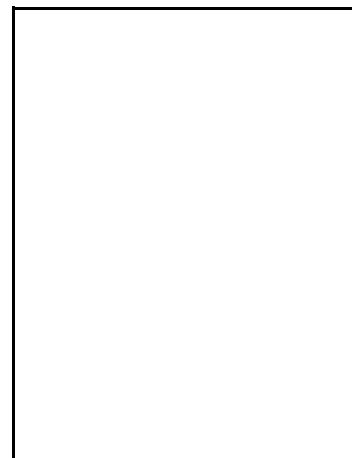
**PARIBESH SANRAKKHON AIN 1995 ABONG PARIBESH SANRAKKHON BIDHIMALA 1997: Dik Nirdeshika, A Bangla Version of Guide to the Environmental Conservation Act 1995 and Rules 1997**, prepared and published by BCAS 2000. Price Tk.150/-

The guidelines in Bangla is useful for all who are involved in the task of environmental protection. It is in particular, intended to be an exclusive sourcebook for the environmental managers of the industries.

aerial photographs, reports and field data on different scales. This publication is a presentation of the first results of the UNEP/RRC-AP-supported study conducted by ICIMOD which includes description of the methods used to identify glaciers, glacial lakes that may pose a threat as well as inventory (and



**INVENTORY OF GLACIERS, GLACIAL LAKES AND GLACIAL LAKE OUTBURST FLOODS-MONITORING AND EARLY WARNING SYSTEMS IN THE HINDU KUSH-HIMALAYAN REGION-NEPAL**, authors: Pradeep K. Mool, Samjwal R. Bajracharya and Sharad P. Joshi, editors: Greta Mary Rana, Diana Gallannaugh, and Dharma R. Maharjan, Published by – International Centre for Integrated Mountain Development (ICIMOD), Nepal.



This book is a translated version of gazette notification of the Environmental Conservation Act, 1995. Published by the MOEF and came into force in June 1995 repealing the Environmental Pollution Ordinance Act 1997 for minimizing the environmental degradation due to rapid industrialization.

The United Nations Environment Programme Regional Resource Centre for Asia and the Pacific (UNEP/RRC-AP) provided ICIMOD with the opportunity of using its expertise in the area of Geographic Information System (GIS) to create a comprehensive inventory and GIS database of glaciers and glacial lakes in Nepal and Bhutan using available maps, satellite, images,

map) of the glaciers and glacial lakes in Nepal. It includes a summary of the results of studies of various glacial lakes, and a brief review of the causes and effects of known GLOF events in Nepal.

We hope that this report and digital database will be of service of scientists, planners, and decision-makers in many ways. ❖

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