

Climate change and Bangladesh: A perspective on where are we

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LIKE the rest of the world, Bangladesh is also seeing significant changes in the climate and feeling its impact in recent years. Changes in rainfall patterns, droughts in rainy seasons, late monsoon, recurring floods and warm winters are all obvious signs of these changes. The impact -- of these changes on the lives of the people and the economy, infrastructures, agriculture and food security are beginning to unfold, it seems, as evidenced by cyclone Sidr.

The government's concern was flagged by the honourable Chief Adviser in the recent meeting of the heads of state in New York in September 2007. Of particular concern is the vulnerability of Bangladesh to sea level rise. Scientists of the Inter-government Panel on Climate Change Convention (IPCCC) have predicted that a 45 centimetre rise in sea level may submerge around 11 per cent of the total land mass of Bangladesh, creating 5.5 million refugees. This will put the food security, health, communication, infrastructure and economy of the nation at grave risk. In one of the worst case scenarios, a sea-level rise of 1 metre would be catastrophic affecting nearly 30 million people and inundating roughly 15-18 per cent of the country.

Bangladesh is not prepared in any way to face such a massive change. It cannot cope with millions of 'climate refugees' as people will tend to move out of inundated areas. Its existing land mass is very small at 144,000 square kms with over 140 million people residing in it and loss of even one-tenth of its total land area will have all the potential of creating a regional disaster with spillover of refugees into other countries. This could lead to regional instability and human insecurity. The worst case scenario of 1 metre rise of sea level would affect the country in untold ways and render a failed economy at worst.

It is nearly impossible to predict the impact in concrete terms, but it is recognised by the international community that it could be a matter of survival for Bangladesh should such a situation arise. Social and economic impact of even a least case scenario is unpredictable. Given the climatic changes felt currently and their visible local level impacts, there is no doubt that climate change is auguring major socio-economic impacts on the country in the very near future. It is going to take sometime for the country to identify and assess all the changes that are occurring due to climate change.

As the population expands and agricultural lands are lost to settlements and other development

projects, the pressure on keeping the agriculture sector healthy and able to provide for the large population will be enormous. Food security will be severely affected if the coastal areas are lost as they also form a significant portion of the "bread basket" of the nation. Even without inundation of the coastal areas, given the current patterns, an estimated 40 per cent of the crop yield will be reduced by 2050 due to climate change variability according to local experts. Major industries in the coastal zone and other important infrastructure may have to be abandoned causing a massive blow to the economy. Communication to the only sea port may be affected. It is impossible to put a figure on the economic loss that could result, and it would not be very wrong in guessing that it could run into hundreds of billions of dollars.

The coastal zone, though pro-

Even though it is at great peril from climate change while being almost a negligible contributor in the global community to carbon emissions with only 0.3 metric ton per capita emissions, Bangladesh remains committed to joining the international community in facing the challenge of reversing climate change. By the same token, the emitters have a moral responsibility to support countries like Bangladesh to cope with climate change. A national programme can bring both sides together for a common cause.

schools, offices and industry, and communication would be colossal and may be impossible for Bangladesh to replace or rebuild. The economic setback suffered due to annual disasters like floods, cyclones and storm surges are overcome by sheer resilience and hard work of the population. But it is doubtful if Bangladesh will be able to withstand a disaster of such proportions as a one-metre rise in sea level. It would require international support and good will to prepare in advance for such a

Bangladesh, due to its vulnerability to disaster, has over the years built up an efficient disaster response mechanism. But Sidr, which made landfall in the evening of 15 November 2007, was beyond the response capacity in the early stages after it struck as it left everything in its path totally or partially destroyed. The entire country was without electricity for two days and communication was snapped almost totally with the Southern part. More than 8.5 million people in 30 districts were affected by the

They are taking a big toll on the economy with the GDP dipping from over 7 per cent to nearly 6 per cent already. Bangladesh is having to import food for meeting its food security for the first time in three decades and the cost of rebuilding in the aftermath of Sidr is estimated at US \$1 billion. If the international community is serious about assisting Bangladesh to recover, then the international debts should be waived. Unless immediate debt relief is provided, Bangladesh will not be able to keep up with the

global funds like GEF are highly competitive amongst countries, time consuming to prepare, has to meet high international standards for proposals and stringent conditions of eligibility which makes it difficult for smaller countries like Bangladesh, lacking the capacities, to avail such funds easily. Unless the international community rethinks and readjusts its policies for providing condition-free and easily available support to the LDCs, who are going to be most affected by climate change, coun-

done. There has been no effort on mitigation even though there is a lot of potential to do so without compromising the economic pace of the country, if technology transfer is provided through international support. It has been done successfully in many countries of the region and Bangladesh needs to learn from regional experiences without having a closed mindset.

It is time for the United Nations, multi-lateral banks and bilateral development partners to come forward to assist the country in a major way and in a coordinated manner. There needs to be more resources for advocacy and awareness campaigns locally to let people know about the threats from climate change and for building local level capacities for adaptation, as the emphasis of Bangladesh's climate change response will be on adaptation primarily while mitigation can be

accommodate climate change concerns and development of matching action plans for each sector with concrete ideas for meeting the impacts of climate change.

This would also require building capacities for meeting them at all levels -- national, sub-national and local or community levels. In order to have a nationwide coverage there needs to be a 'national programme approach' which brings into it a holistic dimension of needs assessment across sectors, research, planning, programming, implementation, coordination, monitoring, evaluation and capturing of lessons learnt for building the position of Bangladesh for climate change negotiations.

A national programme, led by the Ministry of Environment and Forest as the focal point of the government for the United Nations Framework Convention on Climate Change (UNFCCC), will enable the country to face the risks of climate change and its impacts through mitigation and adaptation under a comprehensive national approach. The overall objective of the climate change programme would be to build national capacities for integration of climate change issues in national planning and across sectors, development of policies and strategies for pre and post-Kyoto regime; research and analysis on issues of significant importance related to climate change and tracking the change occurring at all levels (macro, meso and micro); public-private (including community) partnership in strategic initiatives to address climate change through both adaptation and mitigation measures; and determining and enabling financing and appropriate technology options for climate change related initiatives.

The programme has to be flexible enough to allow for independent projects to accommodate funding criteria needs of global funds like GEF and other funding mechanisms like CDM, but through the above approach of a nationally coordinated programme.

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Melting polar ice

ected by polders and dykes, is extremely vulnerable since these are very old, of lower heights than current need and not maintained well and may develop breaches. It is impossible to predict accurately how much of the 710 km long coastal economic zone of Bangladesh will be lost and what the impact on the people living there will be. If there is intrusion of sea water into internal zones through the major rivers, then there will be massive water logging in inner areas causing disruption of lives and livelihoods. It will affect fresh water fisheries badly and bring health risks through emergence of new and old diseases like malaria, kala azar and water borne diseases, and also badly affect the biodiversity and ecology. Loss to infrastructure including homes,

devastating change, should it occur. Only urgent actions to reverse the trends of climate change by drastically reducing carbon emissions globally on an emergency basis by all the countries of the world could save the world.

Bangladesh is used to coping with disasters on a yearly basis. However, the tropical cyclone Sidr with a 100 mile long front covering the entire breadth of the country and packing winds upto 240 kms per hours, was of epic proportions. It was an extreme mega event in the last 50-100 years of recorded disasters in terms of its scope, intensity and impact. The loss of lives was minimised to less than 3500 (another 3000-3500 are missing by some counts) due to early coordinated evacuation.

cyclone, 11 of the districts very badly. More than half a million homes have been completely destroyed and another nearly 1 million homes partially destroyed, more than 10,000 schools totally or partially destroyed. The sheer intensity of the category-IV cyclone is indicative of abnormal change in the climate.

Two recurrent floods in the same year, drought and cyclone Sidr in 2007, which are all unusual, has made the case of Bangladesh as a veritable victim of climate change gain more credence. It is time to reflect how the most vulnerable and poor countries like Bangladesh are going to face climate change in future.

The extreme events of 2007 and its effect on the country's economy are currently being felt nationwide.



Sidr ravaged Sundarbans

major achievements that it made in the Millennium Development Goals (MDGs) in the areas of health, education, child care and sanitation, and may even fall back to a great extent. This would make a mockery of the support to countries like Bangladesh for achieving the MDGs.

Bangladesh, being one of the least emitters of CO₂ and one of the most vulnerable at the receiving end of climate change, has not received the kind of international support that it deserves in order to better prepare for climate change through adaptation and mitigation. International support through the Global Environment Facility (GEF) falls far short of the actual requirements for mitigating the effects of climate change on Bangladesh. On the other hand, the

tries like Bangladesh will remain most vulnerable and enjoy only lip service from the developed world.

So far, the development community has been involved in climate change activities in the country in a very limited way. With some international support, Bangladesh has developed the National Adaptation Plan of Action (NAPA), contributed to the international dialogue on climate change by reporting through the National Communications and is preparing the National Capacity Self Assessment (NCSA). A Climate Change Cell, set up in the Department of Environment, is working to integrate climate risks with disaster management, conducting research, building a database and networking. Some piloting on adaptation is also being

piloted too. The partnership has to be expanded to include the local private sector in climate change activities. Given the current global urgency and significant thrust on facing climate change, and the particular vulnerability of Bangladesh, the development community has to come forward in a major way to assist Bangladesh.

Time has come for Bangladesh to be able to articulate its demands for meeting the climate risks in its various sectors such as agriculture, food, health, education, water resources, land, forest, fisheries, industries, communication, disaster management, etc. This would require a comprehensive risk assessment in each individual sector and across thematically linked sectors. Also it is needed to revise the policies of each sector to

Colonial influences on our forests: Legacy of exploitation continues

MOHAMMAD ASRAFUR RAHMAN

BANGLADESH is the lowest landmass of the extended "Himalayan Drainage Ecosystem" or "Himalayan River Basin Ecosystem". The history of forestry in Bangladesh is a description of deforestation and degradation. The forests were exploited to supply raw materials for the ship and railway industries of the British colonial rulers (1757-1947) and generate revenue for the West Pakistan rulers (1947-71). In independent Bangladesh degradation continued.

Only thousand years ago, eighty percent of the Indian Subcontinent was estimated to possess dense forest cover. Historians believe that much of the area comprising present-day Bangladesh and the Indian State of West Bengal was in wilderness till about 1000 BC. Human settlements started only after 1000 BC by Dravidian speaking people. Economic prosperity of Bengal attracted people from all other parts of India as well as from other countries during the Mughal period. The total population of the area now constituting Bangladesh was only 11.4 million in 1770 and 14.5 million in 1801. Rapid increase in population took place after 1930s, between 1940 and 2001 from 42 million to 129.25 million.

Little is known about management of forest in ancient India. During the Mughal period emphasis on agriculture and revenue augmentation led to clearing of many forests for agricultural purpose. They paid little attention to preservation, propagation, protection and improvement of forests during their reign. Organised forest management activities in India were, in fact, started during the British rule in 1885. Subsequently, a separate forest department was created for Bengal in 1876 for the management and preservation of forests in Chittagong and the Sundarbans. The reservation process in Sylhet

was started in 1914 and its first management plan came into operation in 1938. Dhaka-Mymensingh forests were owned by large landlords; the same was true for Dinajpur forests.

Before the colonisation of greater India by Britain in 1760, most of the CHT was covered with forest. Shifting cultivation, with little or no surplus production, was the only form of agriculture practiced by tribal communities who accounted for most of the population. In 1713, a Chakma tribal chief, requested the then Mughal emperor's representative in CHT "to permit the merchants of the plains to trade in these articles with the hill people", leading to the approval of request by the emperor. This system also became a means of exploitation of the existing forest.

During the East India Company period (1760-1860), the Company did not make any effort for conservation and development in CHT. Rather, it largely followed a policy of exclusion and isolation. The Company's relationship with CHT was limited to collecting tribute from the local population through the commission agents, who were extorting such a high tax that a Chakma chief refused to pay it in 1783. The brooding row between the Company and the tribal chieftains was resolved following the restoration of the latter's right to land tax collection in 1787. The Company changed its land tax policy in 1789, which authorised the tribal chiefs to collect land tax in cash. As a consequence, the farmers were forced to sell their products and grow cash crops.

The British Government directly took over the administration of India in 1857. Following this, the Chittagong district was designated as a separate administrative entity known as the CHT in 1860. Sedentary agriculture or plough cultivation started gaining acceptance gradually among the tribal people as the availability of land for

Land reclamation and human settlement in the Sundarbans region during the Bengal Sultanate period (1204/1575) was encouraged by sufis or pirs (religious leaders). During the Mughal empire (1575/1765) forest clearance was given state recognition. Frontier expansion into the delta's wetlands accelerated under British colonial rule (1757/1947).



Southeast Asia before 1856

jhun declined during the early 1880s when about one-fourth of the land in CHT (1345 sq. miles) was declared as reserve forest. Policy changes were also taking place regarding the ownership and use of forest in CHT.

Immediately after taking over the administration of CHT from the Company, the colonial government made attempts to increase revenue from the forest. In this pursuit, almost all forests in CHT were declared as government property in 1871 for commercial exploitation. Collection of forest products was encouraged and the traders were invited to cut timber. The revenue from forest products increased substantially as a result of such policies. During 1862/71, the

annual average revenue from the sale of timber and other forest products was Rupees 11,000; it had increased to Rupees 102,000 in 1874/75. Another major implication of the nationalisation of the forest was that it changed the status of the forest from a community resource to an open access resource, as the Department of Forestry could not take care of the forest effectively. The process of deforestation was further intensified by the expansion of the railway network, which required a huge amount of sleepers made from hard wood.

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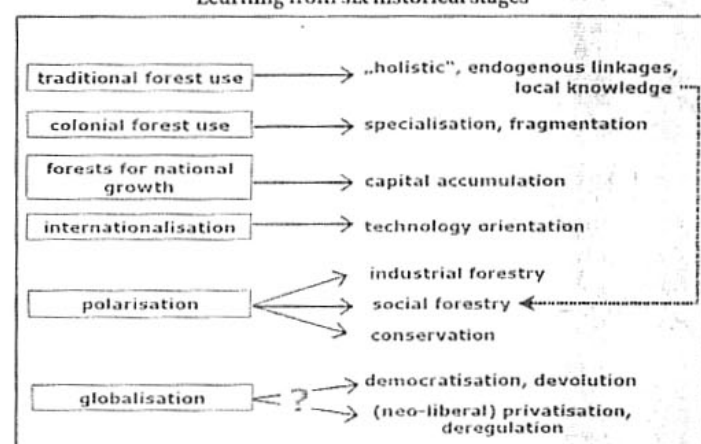
leaders). During the Mughal empire (1575/1765) forest clearance was given state recognition. Whenever any land was sufficiently cleared of forests to be able to produce substantial revenue the land was integrated into the administration system and declared a pargana (administrative unit). The declaration of Ambarabad Pargana encompassing part of Sundarbans in 1734 is such an example. Frontier expansion into the delta's wetlands accelerated under British colonial rule (1757/1947). In 1828, however, the British assumed the proprietary right to the Sundarbans and in 1830 began leasing out tracts of the forests to men willing to invest capital and labour into clearing

operations.

The Forest Department prepared the first management plan in 1871 with the prime objective of regulating the use of H. fomes based on diameter classes. The Sundarbans was categorised as 'production forest'. Management plans (six operated consecutively under this policy purview) were formulated to exploit the resources to generate state revenue. The forest was divided into working circles based on site quality and tree growth and selection-cum-improvement system was adopted as the silviculture system. Along with H. fomes commercially important species like Sonneratia apetala, Xylocarpus mekongensis, Bruguiera gymnorhiza, Cynometra ramiflora were brought under systematic harvesting based on diameter classes. The Forest Act was revised in 1878 and 1927 to strengthen the control.

In case of plain land Sal forest the colonial government was eager to bring the vast uncultivated forests under taxable agriculture. Landlords subsidised the migration of peasant cultivators to clear forest land and convert it to agriculture. From 1767 to 1816, the Santals staged a series of rebellions, using the forests as a basis for their guerrilla resistance struggle. In 1855, Lord Dalhousie, Governor General of India, appointed Dietrich Brandis, a German botanist, to take charge of the teak forests of Pegu in Burma later he became the first Inspector-General of Forests in India from 1864 until his retirement in 1883. Together with his two successors, Schlich and Ribbentrop, both Germans, the Prussian model of forest management was adapted to South

Learning from six historical stages



Historical stages in tropical forest policy.

Asian conditions. Massive amounts of timber were felled to provide sleepers for railway beds, poles for mines, lumber for the building of urban areas, to meet the needs of industry, and the World Wars I and II.

1927 Indian Forest Act provided legal framework for nationalisation of the forests. All reserves were intended to be retained permanently as forested areas. Across South Asia, concepts of forest management have been heavily influenced by the British colonial administration. British colonial forestry created a complex paradigm that included legal and policy frameworks, extensive administrative infrastructures, production and conservation management procedures, and training and scientific research programmes. The British transferred approaches to sustainable silviculture that were being developed in Prussia. Along with new approaches to sustained timber stand management came European concepts of government ownership of forest lands, and bureaucratic and technocratic management. In its place, forest departments were established across the region supported by training and research departments. To this day, all South Asian nations continue to share this historic legacy.

Support of rural livelihood was the dominant target of traditional forest use in the tropics (stage 1). It is evident that origins of the social forestry and the livelihood concept are rooted in this traditional local knowledge. Colonial occupation with the forced dissemination of European value systems (stage 2) led to a far-reaching dissolution of the complex traditional forest use and management systems. After de-colonisation, forest resources were seen in many tropical countries as a potential to accelerate economic growth (stage 3). With the continuing dissolution of colonial links and the noticeable improvement of infrastructure, forest production entered a stage of increasing internationalisation (stage 4). Failures with the previous concepts led to a polarisation in tropical forest policy (stage 5). The current era in characterised by globalisation and the privatisation of forests on the one hand and decentralisation and devolution of forest management rights to local communities on the other (stage 6).

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