

Can't Bangladesh go for green growth?

Climate change, environmental degradation and depletion of natural resources in Bangladesh have been occurring faster than the past two decades due to poverty, over-population and lack of awareness on the subject. It is manifested by deforestation, destruction of wetlands, depletion of soil nutrients, etc.

DR. MD. MIZANUR RAHMAN

THE concept of sustainability drew global attention through the Brundtland Report on "Our Common Future" published in 1987. It was enriched at the United Nations Conference on Environment and Development held in Rio de Janeiro in 1992, and reaffirmed at the World Summit on Sustainable Development held in Johannesburg in 2002. That Summit urged the global community to complete the formulation and elaboration of national strategies for sustainable development and begin their implementation by 2005, as mapped out in the Johannesburg Plan of Implementation. Sustainable development is now widely accepted as resting on the three pillars of the sustainability of economic growth, social development and environmental protection.

Towards green growth

The Asia and Pacific region has become the frontier of the 21st century in shaping world economy. The economic growth is driven primarily by exports which has led to expanded production requirements needed to fuel an ever increasing amount of trade. This has accelerated the environmental degradation of many countries in this region. Gradual environmental degradation, climate change and diminishing natural resources created an extra pressure to adopt an unconventional approach to support the export-driven economic activities of this region. The past axiom of "grow first, clean up later" cannot run more in a region which has limited natural resources and a rapidly growing population directly dependent on natural resources. These countries are now shouldering an increasingly greater share of regional and global environmen-

tal production-related burdens.

The fifth Ministerial Conference on "Environment and Development in Asia and the Pacific" held at Seoul in 2005, where approximately 340 delegates, including representatives from 52 members and associate members of ESCAP embraced the approach of environmentally sustainable economic growth (Green Growth). The Conference endorsed Green Growth as a policy and a powerful strategy to promote "win-win" approaches to reconciling the conflict between current pathways for the achievement of two important Millennium Development Goals: MDG 1 (on poverty reduction) and MDG 7 (on environmental sustainability).

Green Growth emphasizes on demand-side management and promotes environmentally sustainable decisions through the market, economic and fiscal systems. It addresses public awareness to environmentally sound governance, and the development and deployment of new environmentally improved technologies.

How far Bangladesh is from green destination?

Climate change, environmental degradation and depletion of natural resources in Bangladesh have been occurring faster than the past two decades due to poverty, over-population and lack of awareness on the subject. It is manifested by deforestation, destruction of wetlands, depletion of soil nutrients, etc. Natural calamities like floods, cyclones and tidal-surges also result in severe socio-economic and environmental damage. Due to high population density and sharply skewed distribution of lands, the forest resources are overexploited. Per capita forestland in the country is around 0.02 ha and the existing natural forests are decreasing at a

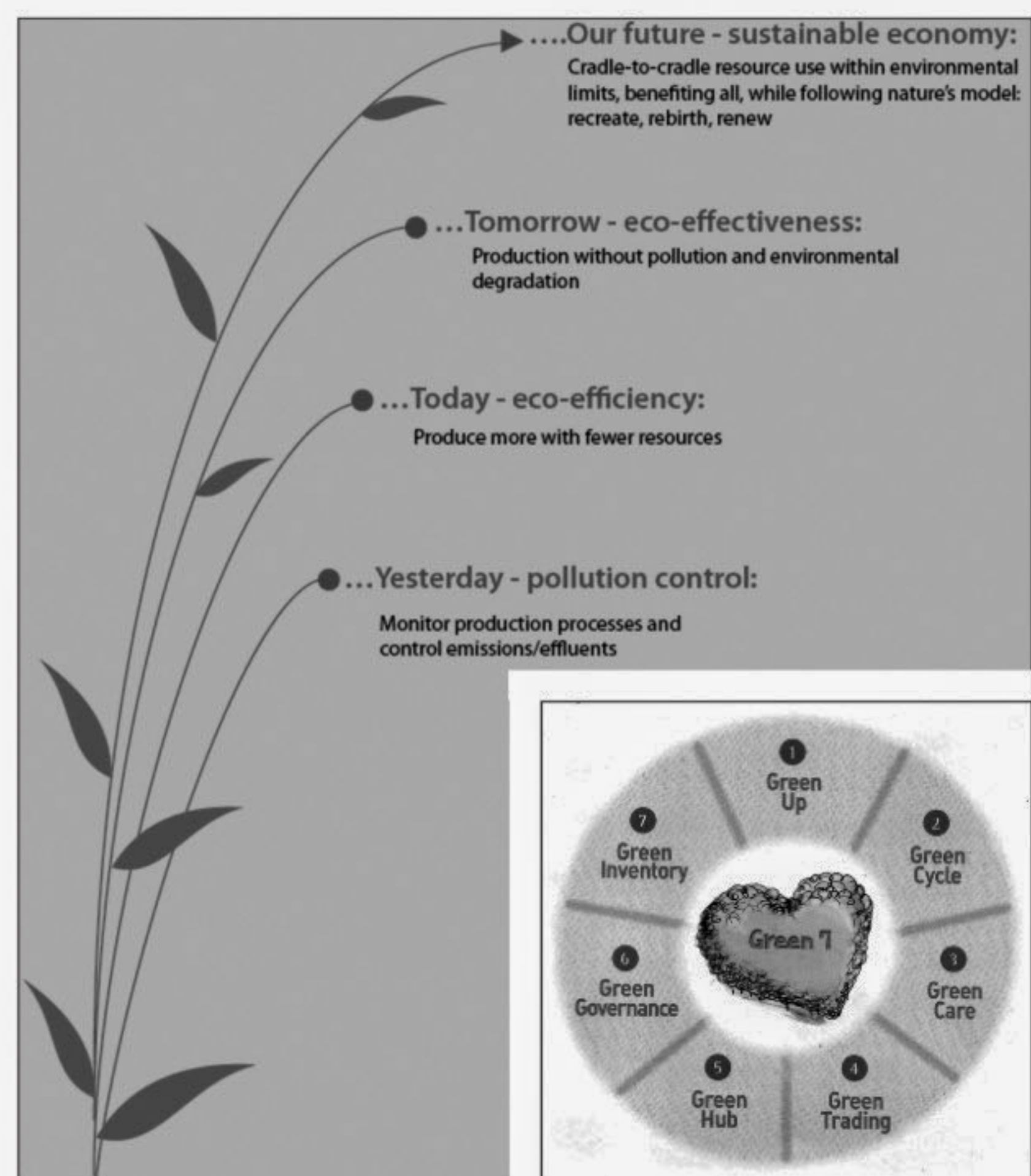
rate varying from 2.1% /yr to 3.3% /yr.

Bangladesh has adopted smokeless brick-making technology introduced by the UNDP. Smokeless technology would help the country's brick making industry to become more energy efficient while increasing production and processing. This will lower local pollution and reduce greenhouse gas emissions as well as production costs and improve product quality. The introduction of electric baby taxis is a giant step towards green transportation. But Bangladesh needs to walk faster to reach the green destination.

How can Bangladesh go for it?

- > Pursuing a 10-year plan for Green Forest Management to expand carbon sinks and enhance the economic value of forest resources
- > Plantation in fallow land and poor grassland to create new carbon sinks
- > Reducing the heat island effect through the creation and management of urban forests, homestead forests, street side plantation
- > Enhancing arbor and planting activities
- > Systematic management of carbon sinks by extending national forests and forest rehabilitations
- > Extending the use of bioenergy for replacement of fossil fuels and reduction of carbon emissions
- > Increasing manufacturing facilities for wood pellets, small particles generally made from dried and compacted saw dusts
- > Reducing greenhouse gas by promoting cycle use of wooden resources
- > Emphasising wooden constructions
- > Creating a forest carbon cycle village (biomass green town) as a low carbon society model, in which fuels, housing, and public facilities are supplied with independently produced woods
- > Conducting long term monitoring of forest ecosystems and special management of vulnerable plant species
- > Establishing arboreum in the hilly areas, coastal zones and Mymensingh area for the systematic preservation and management of forest ecological resources
- > Improving 'tailored forest guideline' based on climatic factors and expand nursery facilities for supplying quality seedlings

- > Initiating crop yield insurance
- > Reducing vulnerability to forest disasters and constructing an early intervention system
- > Conducting domestic model projects of afforestation and reforestation for carbon credits
- > Pursuing forest restoration programme in the hilly areas
- > Building up regional Green Hub
- > Establishing a few research organisations
- > Building a cooperative system for response to climate change with local governments
- > Operating the 'Green Practice Agreement' system which is a partnership reinforcement programme between the forest department and local governments
- > Launching 'forest love movement' as a national campaign
- > Organising a Forest Keeper Network
- > Constructing database of forest activities pertaining to forest resources, forest management, changes in land use and forest disasters
- > Developing biomass extension coefficients and carbon conversion factors by tree species
- > Developing the carbon volume conversion system of statistical data as well as carbon stocking monitoring
- > Integrating geographic information, statistical estimation and statistical test systems
- > Developing a system for monitoring changes in carbon stocks stored in wooden products in preparation for the forthcoming inclusion of wooden products in a carbon account
- > Improving eco-production and eco-economic planning
- > Imposing Green Tax on environmentally non-friendly products and services
- > Improving environmental governance
- > Promoting environmentally friendly goods and services
- > Application of industrial ecology concepts
- > Adopting 3Rs Model of Japan (recycle, reduce, reuse) and formulating the resource-saving society like in China
- > Investing more in natural capital
- > Promoting effective enforcement of laws, regulations and standards relating to sustainable development
- > Providing support for compliance
- > Strengthening institutional structures



Green Growth Concept (Source: ESCAP, 2007)

Components of Green Growth (Source: Korea Forest Service 2010)

and the functions of agencies and institutions relevant to sustainable development

- > Promoting effective multi-stakeholder partnership for the full participation of all groups in efforts to achieve sustainable development
- > Emphasising cleaner production to reduce the energy and materials used per unit of production of goods and services and minimising waste and pollution from production processes
- > Creating a recycling society and the environmental sustainability of consumption patterns
- > Developing markets for environ-

mentally preferable goods and services and encouraging innovation for the development of sustainable technologies

- > Emphasising international trade obligations and multilateral environmental agreements, to be implemented in a manner supportive of environmentally sustainable economic growth

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Population: Environment at stake

"In countries where there are imbalances between trends in population growth and resources and environmental requirements, government are urged, in the context of overall development policies, to adopt and implement specific policies including population policies, that will contribute to redressing such imbalances and promote improved methods of identifying, extracting, renewing, utilizing and conserving natural resources..."



MOHAMMED ABUL KALAM

ENVIRONMENT is a development issue, which is receiving attention now in the world including Bangladesh. Our country today faces major problems of deforestation, desertification, air and water pollution and other environmental degradation. In the context of population and development integration, environment problems cannot be separated from the population problems.

Population increase and economic development to raise standards of living or welfare frequently involve depletion of resources and degradation of the environment. In turn, depletion of resources and environmental degradation adversely affect development, and welfare of population. Yet, to view the problems of environmental deterioration as a consequence of growing population and raising substance requirements is to oversimplify and, in some ways, mistake the real situation.

In Bangladesh, the problems are considerably worse than would follow from the increase in numbers. It is not just population growth that is putting pressure on resources rather, population growth in conjunction with other processes are leading to much more rapid depletion.

relationship between population variables and environmental conditions is essential for attempts to solve environmental as well as population problems. An understanding of the inter-relationships will be useful for the formulation of guidelines for taking curative measures where deteriorating condition exist and for the preparation of preventive measures to forestall the development of environmental problems.

At the same time, an understanding of the interrelationships will also be useful in developing the type of population policies and related activities to assist in improving environmental conditions, welfare of the population as well as regulation of population trends.

The problems are all complex and inter-related. For example, to tackle the problem of deforestation, it is necessary to understand the dynamics of forest ecology, local and regional land use for agricultural purpose, human settlements and industrial development, the socio-economic considerations of the people who raise livestock and cut fuel wood from forests, and international as well as domestic market structures of forest products.

As an example of the intricate inter-relationships involved in the problem, it could be mentioned that environmentally unsound management of terrestrial ecosystems is also bound to degrade the marine environment.

Large quantities of silt carried by many of the rivers into the coastal areas primarily originate from large-scale deforestation and desertification activities upstream.

Similarly, the impairment of human health is primarily the result of environmental pollution due to industrial and urban waste discharges into water courses, automobile exhaust in major cities and lack of adequate supplies of potable water and sanitation facilities.

While environmental problems are increasingly visible and serious, we have to admit that not enough is known about the complex interrelationships between population and the environment, especially in Bangladesh.

Thus one of the priorities for population and development planning in the country will be action-oriented research into the linkages to guide national development policies.

In Bangladesh, there is a serious gap in knowledge on environmental conditions and problems, as they relate to population changes. Much of the evidence presented is fragmentary or based entirely on speculation. There is indeed, an inadequate database of environmental information collected on regular basis with sufficient coverage and scale to support research work in this area. For the time being, a deduction based on the available evidence, leads to the conclusion that population factors have distinct impact on the environment and vice versa.

In the country, in spite of a slow decline in the rate of growth population is still a threat, particularly in terms of environmental deterioration. While the ultimate goal of development is the welfare of the population or the improvement of the quality of life, it is also a philosophy of development to maintain the dynamic equilibrium between population and its environment. Thus both population and environmental concerns must be integrated into social and economic development plans in order for development to be sustainable.

To achieve these goals, rapid population growth must be slowed down and eventually stabilized while strategies on optimal population distribution should be formulated. Concomitantly, environmental conditions must be maintained or improved through:

- Reversing deforestation and erosion in major watersheds;
- Checking the spread of deserts;
- Introducing sustainable water management;
- Reducing acidification and hazardous waste;
- Developing and introducing environmentally safe industrial processes;
- Eliminating hunger through sustainable and diversified agriculture;
- Finding new and renewable source of energy efficiency;
- And protecting species and further loss.

The inter-relationships between population and development are complex and dynamic. The lack of clear understanding of them could lead to a policy, which may worsen the situation. For example, policies on rural development designed to improve the quality of village life, to relieve environmental and other rural problems, to relieve the pressure of rural-to-urban movement and to relieve the environmental problems in big cities, may themselves bring new environmental

problems to rural areas.

The uses of fertilizer, building more roads leading to rural areas, decentralization of industries, among other measures, carry the threat of polluting the rural atmosphere and upsetting the crop cycle and the environment. Moreover, by contributing to environmental deterioration in rural areas, such development may in turn increase the rate of migration to cities rather than reduce it. To avoid the possible negative consequences, balanced development in an integrated fashion is called for.

As far as environmental problems are concerned, there is a growing need for the planning mechanism to take demographic variables into account in a more integrated way than has been done in the past. To date, most planning exercises have utilized a time horizon of no more than five years -- a period sufficiently short for fertility and mortality, if not migration rates as well, to be projected independently of economic development. Certain environmental problems may not be visible in that short period of time. Thus, for the purposes of environmental and population planning a longer-term approach should be taken, in addition to five-year plans.

Here, it is important to note that Recommendation 4 contained in the World Population Plan of Action, 1984, addressed governments as follows:

"In countries in which there are imbalances between trends in population growth and resources and environmental requirements, government are urged, in the context of overall development policies, to adopt and implement specific policies including population policies, that will contribute to redressing such imbalances and promote improved methods of identifying, extracting, renewing, utilizing and conserving natural resources. Efforts should be made to accelerate the transition from traditional to new and renewable sources of energy while at the same time maintaining the integrity of the environment. Government should also implement appropriate policy measures to avoid the further destruction of the ecological equilibrium and take measures to restore them"

Conclusion: There is a need for Bangladesh to recognize the population problem for what it is. At the national level this is a problem which saps national resources, and leads to the maintenance of poverty and the persistence of illiteracy, with all its attendant ills. What is being advocated is not a reduction of national numbers and consequent power or prestige, but a balancing of the development of the human numbers with national resources and national capabilities, so that the people of Bangladesh would be able to attain their full genetic and social potential and contribute fully to the country and the world. The attainment of this goal is being thwarted in many developing countries including Bangladesh by wrong approaches to development and by a too rapid increase in the numbers of the people; hence the need for balanced, integrated and comprehensive population and people-oriented development programmes.

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How likely is flooding now?

The strengthening of La Niña and seasonal occurrence in Bangladesh

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THIS is the second part of my article entitled "How likely is flooding this year?", which was published in the issue of 'The Daily Star' on August 07 of 2010. While the first part was prepared based on the on-going La Niña event at that time, the second part is prepared on the basis of further strengthening of that on-going La Niña. Although, the first part was published in August, I actually prepared it in the month of May 2010. It was originally intended to be published earlier. But it was not done when some other water experts also commented that the possibility of a flood in 2010 (at least at a moderate level) was nil.

Many people believe that advance forecasts with a lead time of about 3-6 months are not doable. Others feel that all these forecasting techniques are in the experimental stage and it is extremely difficult to get reasonable skill for designing a real-time response plan based on these forecasts.

Based on the concerns of these probabilistic forecasts for flood hazards mitigation in Bangladesh, my response is clear here that the beauty of these forecasts lies in making skillful products for at least 3-6 months (1-2 seasons) in advance. This El Niño/La Niña-based forecasting method can produce forecasts in a hot/dry spring about a rainy summer. It can also give an idea about the onset of flooding (early or late). These products are successfully used widely in many developing and developed countries in the world.

I mentioned in my first article that some readers' might be surprised to read any news on flooding when the country was extremely dry with a severe shortage of rainfall. I am now confident that they are now ready to accept the reality of a flood, which has knocked at the door. So, the El Niño/La Niña-based forecasts, which produce flood forecasts for 3-6 months in advance, are achievable in Bangladesh.

Therefore, the objective of this article (Part II) is to emphasize the role of seasonal forecasts for hazards management in Bangladesh. I am just trying to recall that, based on El Niño/La Niña climate cycle, I produced some forecasts in April-May of 2010 (when the country was dry) on a forthcoming floods in late September-October. Currently Bangladesh is flooded and the situation was deteriorating every day. These findings clearly demonstrate that the seasonal forecasts prepared earlier at the beginning of the season (3-6 months before) are fully instrumental. This also summarises that we can produce flood forecast for about 3-6 months in advance with a reasonable accuracy. However, there is a limitation here while the conventional short-range deterministic forecasts are mostly accurate as these are on shorter time scales, the probabilistic

seasonal forecasts have some uncertainties as these are on longer time scales. So, when you read a probabilistic flood forecasts in three tercile format like 40 (upper):40 (middle):20 (lower), it means the possibility (or probability) of higher-than-normal flooding is 40-percentage (upper tercile), the possibility for normal flooding is 40-percentage (middle tercile), and the possibility for lower-than-normal flooding is 20-percentage (lower tercile). So, even we forecast 40-percentage possibility for a higher-than-normal flooding, there is still a 20-percentage possibility for a lower-than-normal flooding.

As compared to deterministic forecasts, this is the kind of limitation probabilistic forecasts have. On the contrary, while the deterministic method can produce forecasts only during the occurrence of an event (for example, the 'Flood Forecasting and Warning Center' of the Bangladesh Water Development Board (BWDB) produces information on daily rise/fall of river water-level in a flooding season), the probabilistic method can produce forecasts in a hot/dry spring about a rainy summer and monsoon flooding (3-6 months in advance).

It is very important to note here that once the seasonal forecasts are prepared, these forecasts need to be monitored based on oceanic and atmospheric anomalies. So, now the question is how does the flooding picture look now for the season September-October-November (SON) of 2010? Has anything changed since August of 2010? The answer is yes; according to the Climate Prediction Center (CPC) (USA), La Niña strengthened during August 2010, as negative sea surface temperature (SST) anomalies reached at least -1°C across most of the equatorial Pacific Ocean by the end of the month.

As La Niña has further strengthened, so current forecast for flooding for September-October-November (SON) of 2010 can slightly be changed from August-September-October (ASO) of 2010. Please note that, on three tercile format, the ASO-forecast was presented as 40 (upper): 40 (middle): 20 (lower). Now with the strengthening of La Niña, the SON-forecast can be presented as 50 (upper): 40 (middle): 10 (lower), which means that there is 50-percentage probability for higher-than-normal flooding, 40-percent probability for normal flooding, and 10-percentage probability for lower-than-normal flooding.

Finally, as these types of seasonal products are used widely and successfully in one-quarter of the globe, Bangladesh can benefit by utilising these seasonal forecasts for flood hazards management.

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