

DHAKA WEDNESDAY FEBRUARY 25, 2009

Observed climatic variations

DR. D. A. QUADIR

GLOBAL warming and climate change is a well accepted phenomenon which has been extensively studied all over the world. According to the Fourth Assessment Report of Intergovernmental Panel on Climate Change (IPCC), the global mean temperature has increased by 0.740C during the past 100 years from 1906-2005. The linear warming trend over the last 50 years (0.130C per decade) is nearly twice that for the last 100 years. The causes of this warming are attributed mainly to the increase of enhanced anthropogenic emission of the greenhouse gases (GHGs). There are dozens of human-produced greenhouse gases, three of them get special attention: carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O). Landuse change and deforestation processes also act as substantial contributor of the GHG to the atmosphere. The atmospheric GHGs absorb part of the long wave radiation emitted from the earth's surface in such a way that the global average energy of the earth-atmospheric system balances to keep more or less a constant temperature of around 150 C. Because of the anthropogenic increase of the GHGs mainly from the burning of fossil fuel in the era of the post-industrial revolution, the unique nature of the energy balance began to disrupt and the temperature

started rising. The warming process has accelerated during the last few decades and the last 25 years from 1980 was found to be the warmest period of the past 100 years. According to estimation reference to 2004, it is seen that Bangladesh contributes to 0.24% of the global emission of CO₂. The major share of GHG production goes to the industrialised countries. Though, Bangladesh has contributed the least for the global warming but the impacts are expected to be the worst. The following factors would aggravate the sufferings further: lack of awareness, extreme poverty, and high vulnerability to disaster, lack of technical knowledge to overcome the impacts, low economic growth and high population density.

The warming of the land-ocean and atmospheric system is not geographically uniform. Some areas are warming rapidly compared to others and some areas are found to have been cooling with a net effect of global warming. The differential pattern of the global, regional and sub-regional warming results in the variation and change in the atmospheric pressure fields, circulation patterns and thermodynamic characteristics causing the precipitation pattern to change. Thus, the atmospheric warming causes serious impacts on the environment, ecology, land-use pattern and socio-economic activities through the joint effect of warming and water balance. The sea-level rise is another impact of

global warming which threatens the low lying islands and coastal zones to inundate. The climate change has enhanced in the global and regional scales the incidents of floods, droughts, severity of tropical cyclones, melting of ice, glaciers and snow packs, heat stress and cold waves, vector and water born diseases, lung and respiratory problems. The sectors like agriculture, water resources, forest and ecology and coastal zones are supposed to be highly vulnerable due to the climate change. The food security might be at stake due to failure of some crops because of the rise temperature to the critical stage.

Regional climate change

So far, the discussions were made on the general aspects of global climate change and vulnerability. Now, we cast our sight towards the regional status of climate change and its link with Bangladesh. We all know that Bangladesh is a disaster prone country. Floods, droughts, tropical cyclones and associated storm surges, river bank erosion and landslides are very common disasters having hydro-meteorological origin. Thus most of the territories of Bangladesh are situated in the low lying delta of the gigantic river systems, Ganges, Brahmaputra and Meghna (GBM). We know that the rivers Ganges and Brahmaputra originate in the Himalayan Mountains and traverse thousands of kilometers before entering Bangladesh.

The river Meghna originates

from a number of streams entering to Bangladesh from the Khashi-Jaintia Hills. About 92% of the catchments of GBM lie in the upstream territories outside Bangladesh. These rivers carry huge amount of sediment laden water from the upstream hills and mountains along their channels and innumerable tributaries and distributaries and flush to the Bay of Bengal. Being situated in the monsoon region, the basins of these river systems get water mostly from the monsoon precipitation during June-September. The snow melt water and that deposited in the reservoirs in the Himalayas in the form of snow, glaciers and liquid water are the source of flow for the rivers in the dry seasons. From this consideration, Bangladesh is vulnerable to the impacts of climate change both inside and outside the country, especially in the water resources sector. Both Nepal and India

reported rapid increase of temperature over the high mountains of the Himalayas, where the snow and glaciers are retreating. Most of the devastating floods of Bangladesh are caused due to excessive rain in the upstream. On the other hand the failure of monsoons along with possible interventions of river flows in the upstream might cause several ecological and environmental problems in Bangladesh. Thus, the climate change impacts should be treated as a national as well as regional problem. It is expected that a comprehensive adaptation plan may be developed with mutual collaboration among the neighbouring countries or under the SAARC umbrella for resolving the climate change impact and adaptation issues. Joint studies on regional level may be undertaken on the climate change issues. The SAARC Meteorological Research Centre (SMRC), which is

CONTINUED ON PAGE 61

বাংলাদেশ ব্যাংক
পুনঃপ্রাথমিক
সীমার শর্ত

মাত্র
৯%
সুদের হারে
দীর্ঘমেয়াদী
গৃহ নির্মাণ ঋণ

নিজের
একটি স্বপ্নের বাড়ির জন্য...
ঝামেলাহীন
গৃহ নির্মাণ ঋণ

ফ্রান্সিস হাটিন্যান্স এন্ড ইনভেস্টমেন্ট লিমিটেড

হেড অফিস : ৯৫৬৬০০৭, ৯৫৬৬০৮৫
এসএমই শাখা : ৯৫৬৬৮৮০
উত্তরা শাখা : ৮৯৫৮১০৮

চট্টগ্রাম শাখা : ৭১০০৮৯
খুলনা শাখা : ৮১২৯২৮
বকুড়া শাখা : ৬৯৮২৮

*At Reliance Your Security
Comes First*



With its strong back-up of human resources, indepth know-how and wealth of experience, Reliance is fully geared to meet all your general insurance requirements in a fast changing world.

EXPERIENCE-STRENGTH-SECURITY



**RELIANCE
INSURANCE
LIMITED**

BSB BUILDING, 8 RAJUK AVENUE
DHAKA-1000, BANGLADESH
PHONE: PABX-9560105
E-mail: ril@bol-online.com
Fax: 880-2-9562005
www.reliance-bd.com



S. ALAM COLD ROLLED STEELS LTD.



S. ALAM GROUP

e-mail : salamgrp@globalctg.net
www.s-alam-group.com