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<th>Global warming and climate Change : implications for the SAARC region.</th>
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Global Warming And Climate Change:
Implications For The SAARC Region

By

Saleemul Huq
GLOBAL WARMING AND CLIMATE CHANGE: IMPLICATIONS FOR THE SAARC REGION

by

Dr. Saleemul Huq
Executive Director
Bangladesh Centre for Advanced Studies

INTRODUCTION

Thank you Mr. Chairman, for inviting me here today to address this important gathering of media personalities from all over the South Asian region on the topic of Global Warming and Climate Change: Implications for the SAARC Region.

I would like to congratulate the organizers of this workshop for their very timely effort to bring together media personalities to discuss such an important issue for our region and the world, namely Environment. I am sure that the participants at this workshop will find the subject interesting and I look forward to seeing their output in the media in future.

I propose to give my presentation in three parts: Firstly to give a very brief introduction to myself and the organization I represent, then to discuss the issue of Climate Change and Global Warming in general and finally to look at the implications for the South Asian Region.

BCAS

To start with myself, I am a biological scientist by training, having studied and taught in British Universities for a number of years before deciding to come back to Bangladesh in the mid-eighties to set up, together with a group of other scientists with similar background, the Bangladesh Centre for Advanced Studies as the first non-government, non-profit multi-disciplinary scientific research institute in the country. At that time we identified environment as an area needing the expertise from different disciplines including the natural as well as social sciences and our main programme is called Resource Management, Environment and Development. During the last few years the organization has emerged as one of the leading research institutes working on environmental issues in Bangladesh and has produced a number of publications including:
Environmental Aspects of Surface Water Systems of Bangladesh.

Environmental Aspects of Agricultural Development in Bangladesh.

Environmental Profile of Bangladesh.

Cyclone '91: An Environmental and Perceptual Report.

Bangladesh Environmental Newsletter (in English and Bangla)

These publications are available from the BCAS Library.

Recently we have also started a programme on Global Climate Change in which we have become the Secretariat for a group of environmental NGOs in South Asia which have got together to form the Climate Action Network - South Asia or CANSA. We have recently held a workshop in Dhaka and also produce a Quarterly Newsletter called Clime Asia which is widely distributed in the region. The group has also taken a leading role in the ongoing international negotiations on climate change which I will return to later.

CLIMATE CHANGE

Now let me address the issue of Climate Change and Global Warming. I am aware that perhaps for many of you this part of my presentation may be redundant however for the benefit of those who may not be familiar enough with the key scientific issues I shall give you a brief description.

The earth's atmosphere is composed of a large number of gases in different amounts. Some of these gases are quite familiar such as Oxygen which is needed by all living beings, including us humans in order to respire. Some of these gases such as Carbon Dioxide, Methane and Chlorofluoro Carbons (CFCs) have an additional effect of trapping part of the sun's energy which would otherwise be reflected from the earth's surface back into outer space. These gases are collectively called greenhouse gases because they make the earth behave like a greenhouse where the temperature inside the greenhouse can be much higher than outside due to the trapping of the sun's energy by Carbon Dioxide given off by plants within the greenhouse; hence the name "Greenhouse Effect" with which you must all be familiar by now.

Now, a question sometimes arises about whether there is any Greenhouse Effect occurring at all in the earth's atmosphere. The answer to this question is very unequivocal: there is a definite and proven Greenhouse Effect which accounts for the present day temperatures on our planet. If there had been no Greenhouse Effect then the temperature would be 10-20°C lower than at present. So there is no doubt at all that the Greenhouse Effect is real.
The more interesting and controversial question is whether mankind's activities, particularly since the industrial revolution, has accelerated the process by increasing the concentration of Greenhouse gases to unprecedentedly high levels. The general consensus amongst scientists on this issue is that human activity over the last 200 years has definitely doubled the concentration of the main Greenhouse Gases and the trend is increasing. Therefore, if this trend continues there is every likelihood that mean atmospheric temperatures will increase globally and there will be a global warming.

The debate amongst scientists relates not so much as to whether global warming is occurring but rather by how much and how catastrophic is it likely to be for the planet.

In order to get the best available and most up-to-date scientific advice on this subject the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) jointly set up the Intergovernmental Panel on Climate Change (IPCC) with about 200 of the world's leading scientists from all over the world who produced a Report giving their conclusions as follows:

They reported that the Greenhouse Effect was indeed taking place at an accelerating pace and they made three different projections depending on the future levels of Greenhouse Gas emissions which they called:

(i) the "business as usual" scenario in which Greenhouse Gas emissions continued at currently projected accelerating rates with no change whereby they estimated that global temperatures would rise by 5-8°C within the next century.

(ii) A stabilization in Greenhouse Gas emissions at present levels where there would still be an increase of 3-5°C and

(iii) A reduction of Greenhouse Gas emissions from present day levels where there would still be an increase of 3°C but over a longer time horizon.

In other words we are almost certainly locked into an increase in mean global temperature of anything from 3-8°C over the next century.

Now, this increase in mean temperatures of 3°C might not seem much at first glance but it should be borne in mind that this is only the mean (i.e., average) temperatures and therefore the peak temperatures would also be much higher. Such increases in maximum temperatures would have devastating consequences for the world's climate system particularly the South Asian Monsoon System which would definitely become more erratic.
Another major consequence of increased global temperatures is rise in the mean sea level due to thermal expansion of the oceans and increased snow melt in the Mountains. Thus for a projected increase of 3°C over 50 years the sea level is predicted to rise by at least 30 cm. This would also lead to greater intensity of cyclones.

IMPLICATIONS FOR SAARC REGION

I shall now turn to the implications of a global warming for the SAARC region. As stated earlier the consequences of global warming would include the following phenomenon:

- Increased peak temperatures making droughts more frequent and increasing snow melts.
- Erratic monsoons making rainfed crops more vulnerable.
- Increased likelihood of Cyclones and tidal surges in the coastal areas.
- Sea level rise leading to inundation of low lying coastal areas and islands.
- Increased likelihood of river flooding from increased snow melt and drainage congestion from sea level rise.
- Salinity intrusion in surface and ground water due to sea level rise.

If we now superimpose these possible consequences on the countries of South Asia we see that each and every country is likely to be adversely affected at least by one of these phenomena.

1. Bangladesh:

   - Rainfed crops likely to be affected by changes in monsoon regime.
   - Drought likely to increase due to higher peak temperatures.
   - Floods likely to increase due to sea level rise and increased snow melt.
   - More cyclone intensity due to sea level rise.

2. India:

   - Rainfed crops likely to be affected by changes in monsoon regime.
   - Low lying coastal areas likely to be inundated due to sea level rise.
o Increased incidence of drought due to higher peak temperatures.

o Increased intensity of cyclones on the eastern coast.

3. Pakistan:

   o Increased incidence of drought due to higher peak temperatures.
   
   o Inundation of low lying coastal areas due to sea level rise.
   
   o Salinity intrusion due to sea level rise.

4. Maldives:

   o Acute vulnerability to inundation due to sea level rise.
   
   o Salinity intrusion due to sea level rise.
   
   o Increased incidence of drought due to higher temperatures.

5. Sri Lanka:

   o Rainfed crops vulnerable to monsoon changes.
   
   o Higher incidence of drought.
   
   o Low lying coastal areas susceptible to sea level rise.

6. Nepal and Bhutan:

   o Increased susceptibility to flash floods and landslides due to increased snow melt.

These are shown in summary form in the table.

CONCLUSION

It is clear from the above that each and every country in the SAARC region is vulnerable to some aspect of global warming and it would probably be fair to say that in terms of population at risk to global warming SAARC tops the list out of all the regions in the whole world.
Now the question remains: What can be done?

To start with we need to know a great deal more about how we are likely to be impacted and which are our most vulnerable regions and groups. This will need regional cooperation to study climate, temperature and sea level rise. Then we must try to develop adequate response strategies which would allow us to cope with the impacts of global warming both nationally and regionally. It is also essential for our countries both individually as well collectively to make our voices heard loud and clear with a unified message in the ongoing International Negotiations on Climate (INC) currently underway which is supposed to have a Climate Convention for signing by all the world's heads of state during the UN Conference on Environment and Development to be held in Rio de Janeiro, Brazil in June 1992.

Unfortunately, there is insufficient importance being given to this issue by some of the SAARC countries, including Bangladesh, and it is for you the media representatives to draw the attention of the general public as well as the politicians and policy makers in our countries of the urgent need to take this matter with the seriousness it deserves.

I hope you will do your utmost to see that this message gets across and I assure you of our support in your efforts.

Thank you very much for giving me a patient hearing.
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<tr>
<th>Phenomena</th>
<th>Bangladesh</th>
<th>India</th>
<th>Pakistan</th>
<th>Sri Lanka</th>
<th>Maldives</th>
<th>Nepal</th>
<th>Bhutan</th>
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<tbody>
<tr>
<td>1. Drought</td>
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<td>2. Snow melt</td>
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<td>3. Sea level rise</td>
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<td>4. Cyclones</td>
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<td>5. Floods</td>
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<td>6. Change in monsoon</td>
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<td>7. Salinity intrusion</td>
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<td>8. Landslides</td>
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- : No effect
+ : Low effect
++ : Moderate effect
+++ : Acute effect