

Climate change conferences From RIO to Cancun

CHAKLADER MAHBOOB-UL ALAM

IN December, 2010, the last UN Climate change conference was held in Cancun, Mexico. It dealt with the problem of the greenhouse effect. Before we discuss whether it was a success or a failure, some background information will be useful.

First of all, what do we really understand by the term "green-

house effect"? "Greenhouse effect" is the heating process of the earth due to the presence of greenhouse gases (carbon dioxide is an important component of these gases). The earth receives sunlight, which is absorbed by its surface, and re-radiates some of this energy as thermal radiation. The greenhouse gases in the atmosphere absorb the outgoing radiated energy and re-emit some of it back towards the earth.

Thus, the presence of the atmospheric greenhouse gases results in

the surface receiving more radiation than it would if the atmosphere were absent; and it is thus warmer than it would be. Although the mechanism to retain heat is different in case of real greenhouses, the heating process of the earth due to the presence of atmospheric gases is named by analogy to greenhouses.

The greenhouse effect in itself is not a problem for humanity. In fact,

house gases is intricately related to industrial activity. Carbon dioxide and methane are emitted as a result of fossil-fuel burning. Cars, trucks, power plants, steel mills, farms, planes, cement factories home furnaces etc. virtually all of them spew carbon dioxide into the atmosphere.

Although it is difficult to assess the exact impact of global warming, there is a consensus of opinion that

gas emissions while continuing with industrial activities?

This is a global problem. Since no one nation single-handedly can do much to counteract the greenhouse gas build-up in the atmosphere we must deal with the problem on a global basis. The first such attempt was made at the Earth Summit held in Rio de Janeiro, Brazil in 1992. It was truly an international conference, and was attended by 117

lined global strategies for cleaning up the environment and encouraging environmentally sound" economic development.

Although these were considered to be noble objectives by all the participants, there were significant discrepancies about the manner the recommendations should be implemented. The less industrialised countries of the South were not prepared to accept emission restrictions imposed by the heavily industrialised North unless they received adequate compensation from the North.

A second meeting of the FCCC (Framework Convention on Climate Change) was held in Kyoto in Japan in 1997 with the objective of setting gas emission targets that would be binding under international law. The target set by the Kyoto Protocol for the industrialised countries was a 5.2% reduction in overall greenhouse gas emissions by 2010 relative to 1990. No mandatory targets were set for the developing countries. The target for the EU was an 8% reduction, the US 7% and Japan 6%.

In order to make the proposals more attractive to the rich nations, the Kyoto Protocol introduced a curious carbon trading system. Since a tonne of gas causes the same damage to the global environment, no matter where it is emitted, the US, for example could keep its high compliance costs down by paying for the low compliance costs in say, a country in Eastern Europe, and obtaining paper credit for the amount of emission reductions, which could then be set against the target for the US.

So, 13 years after the adoption of this ambitious project, what is the situation today? Since 1997 many FCCC conferences have been held with some more successful than the others. Unfortunately, there has been little effective change. If the main objective of the Kyoto Protocol was to reduce the

carbon dioxide levels in the atmosphere, the net result of all these negotiations, as measured by the Keeling Curve, has been negative. It shows that the gas is rising continuously over time.

In December 2010, the machines at the Mauna Loa Observatory in the middle of the Pacific Ocean, which collects data for the Keeling Curve, indicated that the carbon dioxide level at that moment had reached 390 (it was 350 in 1990)

So, in light of this terrible verdict on the world's efforts to reduce carbon emissions, it is fair to ask: Did we make any progress at Cancun? Yes, we made progress but only modest ones. A pledge to create a climate fund for the developing countries was given at Cancun, which would provide \$100 billion a year to help pay for emission cuts and climate adaptation like sea rise and drought by 2020. A deal was arranged to reward countries for lowering rates of deforestation. It also created new mechanisms for the transfer of clean energy technology.

This is certainly good news for countries like Bangladesh and island nations. The Cancun agreement gave another year to its participants to decide whether to extend Kyoto Protocol, which is scheduled to expire in 2012. No doubt, all this is good news. But unfortunately, the world's largest emitters, the US and China managed to remain outside the Kyoto Protocol.

So what is the conclusion? Conferences like the one held at Cancun give useful opportunities for bilateral and multilateral discussions. But the truth is that until and unless the US, China and other industrialised countries take tough measures to reduce carbon emissions, no good news will come out of the Mauna Loa Observatory and the carbon level will continue to rise.

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if the earth's surface was not covered by a blanket of greenhouse gases, (carbon dioxide, water vapour and a few other minor gases) life on earth would not exist. It becomes a problem when there is a process of "accelerated warming of earth's surface due to anthropogenic (human activity-related) releases of greenhouse gases due to industrial activity and deforestation." This accelerated warming is also known as global warming.

The emission of excessive green-

if the current trend in the emission of greenhouse gases continues, natural and agricultural ecosystems will be substantially altered. There will also be significant impacts on human and animal health. Due to the rapid melting of polar ice, sea levels will rise. Coastal areas of Bangladesh and the nearby islands will most probably disappear under water.

Since industrial activities have brought material progress and well-being to mankind, the problem we face is: How to reduce greenhouse

heads of states and representatives from 178 nations.

Among the many treaties and conventions that came out of the conference, the one that drew most attention was the Framework Convention on Climate Change (also known as the Global warming Convention). Although the treaty did not set binding targets for emission reductions on carbon dioxide, methane and other greenhouse gases, the signatories agreed to reduce their emissions. Another convention, called Agenda 21, "out-

Time to save the Turag from pollution

MUHAMMAD SELIM HOSSAIN

RIVER pollution has been one of the main talked about topics in the environmental issue of urban Dhaka. Since the birth of Bangladesh due to rapid and unplanned urbanization and industrialization the rivers surrounding the capital city, including the Turag have been steadily experiencing complicated problems like pollution and encroachment that have almost suffocated these valuable lifelines of the city. The writer has roughly appraised the pollution of the Turag River especially from the Buriganga Third Bridge to the Tongi Bridge and found two points with extreme pollution. This write-up discusses these two pollution points of the river homing in on the sources and causes of pollution, its impacts on the surrounding environment and possible sustainable remedies.

Pollution points and impacts

The highest pollution points of the Turag River include the Buriganga Third Bridge area at Bashila and the Tongi Bridge area. At these two points, the river water is pitch-black with the worst of smell and can be used for hardly any purpose as at both points DO (Dissolved Oxygen) level is 0, almost all the year round except during the rainy season when the river becomes full to the brim; whereas DO level necessitates 6 mg/l for drinking, 4-5 mg/l for recreation, 4-6 for fish and livestock, 5 for industry and irrigation according to the Environmental Quality Standard (EQS) complied in Bangladesh. The tolerable level of Biological Oxygen Demand (BOD) is 0.2 mg per liter for drinking, 3 mg/l for recreation, 6 mg/l for fish and 10 for irrigation. But the present BOD level at these two points is absolutely ignorable for any use. Similarly, other parameters of water quality like TDS, TSS, TS, Turbidity, Conductivity, COD, pH, Cadmium, Copper, Zinc, and Lead are gradually obtaining such figures that have already surpassed the tolerability.

Due to over spilling of pollutants during the rainy season, the agricultural lands of Washpur and Shalmasi of Keraniganj and Bashila and Katasur of Mohammadpur have been so contaminated that they have lost their crop growing capacity and hence remain unused all the year round. Of course, some of the lands are now experiencing other uses like housing project and

brickfield development. These land uses eventually cause illegal occupation of river banks and increase pollution concentration in the river.

Sometimes the pollutants enter food chain eventually killing birds, fish, and mammals. Pollution concentration here increases abruptly at the advent of the lean period as the water level of the river recedes a lot at this time but the rate of pollutant released into the river remains identical. At this period, pollution is so acute that hardly any hydro-organisms can tolerate it and eventually, fish of many species are found floating dead in the river water. These dead fishes gradually get rotten and highly add to the further pollution of the river water.

Sources and causes of pollution

The pollution spot near the Buriganga Third Bridge experiences huge toxic chemical liquid waste from the Hazaribagh Tannery area through Bashila Khal. There are about 149 tanneries in Hazaribagh which daily generate about 18,000 liters liquid and about 115 metric tones solid waste almost all of which get released into the river Turag through Bashila and Katasur khals. Examples of such pollutants include cyanide, zinc, lead, copper, cadmium, and mercury. There are many slum type houses on both sides of Rayer Bazar Embankment and also on the Katasur Khal. The slum dwellers use unhygienic open latrines. All the domestic and human waste they generate gets discharged in the Turag River through khals. All these contribute to the pollution of a portion of the Turag River close to the Buriganga Third Bridge. The pollutants diffuse up to the Iztema field area at Tongi Poursova from this downstream point of the Turag.

The other extreme pollution spot is near the Tongi Bridge that derives massive pollutant loading from the Tongi Industrial Area. This industrial area possesses about 29 heavy industries. This cluster of industries of the capital city generates 7,159 kg effluents daily (IWM, 2008). A study was conducted by H. M. Zakir, Sharmin Shila and Shikazono Naotatsu in 2006 to investigate the heavy metal contamination of water and sediments of Turag River at Tongi area. Untreated urban sewerage and industrial wastewater from Tongi area affect water chemistry of this part of the Turag River. Fourteen samples of water and sedi-

ments were collected from both sides of the river. The results showed heavy metal concentrations in the water greatly exceeding the standard values for the surface water quality. The mean concentrations of Mn, Zn, Cr, Cu and Pb in the sediment samples (896, 111, 97, 49 and 24 µg/g¹, respectively) were higher than the standard. The

generate essentially in the production process. The present ETPs (Effluent Treatment Plants) status in Bangladesh makes the situation blatantly obvious to us. According to an industrial survey conducted by Bangladesh Center for Advanced Studies (BCAS) in 2009, only about 40% industries have ETPs. In 10% industries, ETPs are

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A plastic industry on the Turag bank at Dhaur: Potential source of disposing toxic liquid chemical waste directly into the river.

enhanced metal concentrations are related to the direct discharge of the industrial and municipal wastes into the river.

Major limitations and suggested remedial actions

To ensure rapid development of the nation, obviously there is no alternative to massive industrialization. But ironically the scenario in Bangladesh is that we always try to ignore and bypass the issue of sustainably managing the waste that the industries

under construction and about 50% industries have no ETP establishment. That is, more than 50% of waste generated by the industries eventually goes to the rivers untreated.

At this state things, there is no time like the present for the government to put pressure on the industry-owners to establish ETP on their respective industry premises. Moreover, the government also should scrutinize whether the ETPs are operated properly or not because all the industries

having ETPs don't keep them operational all the time.

At times it may be beyond the economic strength of many industries to brace the establishment and operation cost of an ETP single-handedly. In these cases, the government can provide technical help and subsidy to those industries. In addition, a cluster of industries can jointly bear the expenses and treat their generated waste establishing a common ETP. It is a ray of hope that recently the industry owners of Tongi Industrial Area have unanimously decided for establishing and operating a central ETP with their concerted effort with a view to tackling the Turag River pollution (Prothom-Alo, August 31, 2010). This welcoming manoeuvre the government should seriously adjudge and exploit the conscious feelings of the industry owners for other areas.

If this system fails for some reason, the government may think to introduce Polluters Pay Principle (PPP). The government can establish and run ETP at the premises of each industry levying its expenses on the respective industry authority.

It is praiseworthy that the monitoring and enforcement wing of the Department of Environment has been launching anti-pollution drive. The anti-pollution drive body has fined eight industries polluting the Turag River and directed them to establish and run ETP.

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Concluding remarks

If the sources of these two major waste disposal outlets into the Turag River can be taken care of, it is firmly expected that the river can get relieve from pollution to a great extent and now is the time for sealing these waste dumping outlets as the pollution level of the Turag has not yet gone beyond treatability like that of the Buriganga and the Shitalakhya. So, the government and other stakeholders should seriously consider taking effective actions before it is late.

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