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Role Of The University On Environmental Issues-II

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Industrial Waste from Unplanned Establishment

Usually developing countries like Bangladesh attach importance on industrialization. In Dhaka City and in surrounding areas various types of industries have been installed almost in an unplanned way. These industries release different types of toxic gases in the air which due to poor waste management system deteriorating the situation further. Everyday huge amount of gases, chemical solids and liquids, corrosives, radioactive and many other industrial wastage are disposed in the land, water and air of the city. Reckless disposal of waste materials are continuously contaminating the water of the River Bouriganga which has reached to such a position that Water Treatment Plant for procuring drinking water by WASA had to be set up.

Sewerage

Sewerage and sanitation system in the city except some planned residential area is not well developed. The system that exists was mostly installed before 1971. Necessary repair and renovation work could not be done. So it has become highly a risk factor in maintaining purity of drinking water being supplied by the Dhaka WASA. Water and sewerage pipelines are often united together and polluted water is supplied in the households of Dhaka City. Moreover, there are a good number of slums in the Dhaka City. They lack water supplying sewerage facility. At the time of rainfall almost total area of Dhaka City is contaminated by the sewage of these slums. Almost after every 2.3 year the country and the cities are facing devastating flood causing damage to economy, health and hygiene and well being of people.

Unplanned Construction

Unplanned construction of highrise buildings without leaving adequate vacant spaces create ventilation problem. For construction of unplanned buildings, trees are discriminatory removed causing serious problems to ecological balance. Further, no attention is given for plantation of trees in fast growing residential, commercial and industrial areas and centres. This is also intensifying the existing environment pollution problem.

Climate Change

Bangladesh is situated in the torrid climatic zone. Average yearly rainfall is between 119.38 and 345.44 cm. Among the six seasons, summer, monsoon and winter are the salient. The highest temperature varies from 37 to 40 degree Celsius and the lowest from 7 to 12 degree Celsius. Except the cyclones and tornadoes, the wind velocity is moderate.

The first survey on the climate change of the country was carried out with the technical assistance of the USA. The survey was conducted mainly to prepare the following four working plans:

A. Greenhouse gas emission inventory

B. Vulnerability and adaptation

C. Mitigation

D. Awareness and dissemination

The survey was conducted taking 1990 as the base year. The Department of Environment (DOE) has recently published the report.

According to the survey, in 1990, carbon dioxide emission in Bangladesh caused by the primary fossil fuel was 13,443 gigagrams.

Per head yearly greenhouse gas emission in Bangladesh is 135 kg.

Besides, carbon dioxide, the other major greenhouse gas in Bangladesh is methane. From the inundated rice fields and the livestock excreta 468 and 520 gigagram methane respectively is emitted yearly. The emission of other greenhouse gases in Bangladesh is very minor. In general, the condition of carbon dioxide gas emission is still not very alarming in Bangladesh. The trees in the country still consume more carbon dioxide than is produced by human beings.

The survey report warned that if adequate measures are not adopted in due time the increase in temperature and carbon dioxide levels will effect radical change in the climate of the country. As a result, the agricultural production will decrease. The rice production may fall from 14 to 16 per cent. Thus research in Universities and relevant agencies need to be carried out for remedial appropriate measures.

Water Treatment

In almost all the developed countries of the world surface water is used by establishing water treatment plant for having drinking water for the city dwellers. In most of the case big cities of Bangladesh, drinking water is procured by infalling deep tubewell. Rickless installation of deep tube-well apprehended to cause earth quake in the city. In the suburb and in many places of Dhaka City land pump tubewells are used. High concentrations of naturally occurring arsenic have already been formed in water from thousands of tubewells, the main source of potable water across more than, half of Bangladesh Districts. But the majority of the tubewells of the country is yet to be tested. Dhaka City may also be stricken by this problem.

Arsenic Poisoning

With more than an estimated 20 million of its 123 million people assumed to be drinking arsenic contaminated water, Bangladesh is facing perhaps the largest mass poisoning in history. Very high concentrations of naturally occurring arsenic have already been found in water from thousands of tubewells, the main source of potable water, across more than half of Bangladesh's Districts. But the majority of the tubewells yet to be tested, the extent of the problem is still largely unknown. Nonetheless, a significant portion of country's groundwater has proven to be contamihated with arsenic poisoning, mainly in the southwestern, middle and northeaster parts of the country. From various research and measurements of water it was seen that arsenic concentration is very irregular, so tubewells in neighbouring locations or even different depths can be safe.

The threat of arsenic has now spread over rural and urban areas of many districts of Bangladesh, and even many countries in the world now know about this. People are panicking but there are not many options opened for them to have safe drinking water. So, now the situation is getting more or less chaotic. Arsenic is not an uncommon contaminant of groundwater. It is a naturally occurring element and usually presents in the form of compounds with sulfur and with many relevant elements. However, arsenic contamination of drinking water supplies has recently been realized as a global problem. Some of the severe case have been documented in, Taiwan, Argentina, Chile, Canada, Mongolia, and Mexico. But probably the biggest outbreak of environmental disaster arsenic poisoning has been discovered in Bangladesh and West Bengal of India.

Compared to other arsenic affected countries, the arsenic problem in Bangladesh has been detected very recently. The issue of arsenic in underground drinking water in this region was possibly first noticed in West Bengal, India. But, Dr. K.C. Saha. School of Tropical Medicine, Calcutta presented the first official report of farseeing study in July 1983, from the water samples of tubewells having depths varying from 20 m to 110 m (Quadiruzzaman, 1996). Arsenic in groundwater has been found above WHO maximum permissible limit. 0.05 mg.L in six districts (out of seventeen districts) of West Bengal (Das et al. 1995). It was doubted that groundwater of adjacent districts of Bangladesh might contain high arsenic since both West Bengal and Bangladesh are in the same "Bengal Delta Plain."

The Department of Public Health and Engineering (DPHE) of Bangladesh arranged few tests for water from 34 tubwells in August 1993 and arsenic was found in 5 of the tubewells to be above the threshold limit of Bangladesh (0.05 mg.L). And, this proved the fear that came from the experience from West Bengal. Further investigation of DPHE and other organizations widely reported the intermittent incidents of arsenic contamination in groundwater and consequent arsenic poisoning of the users. A DPHE/DFID regional survey conducted in 1998 shows 59 out of 64 administrative Districts of Bangladesh: the groundwater is contaminated with arsenic. The percentage of arsenic affected Thanas (sub-districts) are 43% (Mia, 1998). An estimated 24 million people are directly exposed to the arsenic problem and 75 million are at risk of arsenic contamination. It has been reported that so far about 7000 arsenicosis, a disease caused by slow poisoning of arsenic over at least 10 yeas or so, affected patients are identified in the arsenic affected areas (web Page of Dainichi consultant).

Environmental Education for Sustainable Development

In Bangladesh, Universities are found to give increase attention to environment. As a separate discipline or as a part of relevant disciplines/subjects, the problems are being studied. However, what is urgently necessary is the planned approach through integrated and coordinate efforts of the Universities and relevant agencies, which is found lacking. It is sine quo non-for sustainable development. In fact sustainable development requires not only proper and adequate enlistment in a planned way, it also requires adequate maintain once of resources and favorable environment. To this end both for preserving environment and to solve the problem there to, what is warranted is a sustainable all inclusive environment policy. Before adopting or formulating policy main factors and / reasons relevant to adverse impact of environment need to be detected—which needs action oriented motive survey, research and study in both micro and macro level. If once root of the problem is detected solution will be easier.

Conclusion

Deterioration of environment due to various factor adverse by affecting health and such deterioration has been taking place resulting in economic loss. This adverse factor need to be addressed.

The big cities in Bangladesh have been assuming the character of environment polluted city. Efforts and measures are urgently needed for formulation of sustainable environment policy and their proper implementation. In this context the universities can play a vital role in developing model for sustainable use of environment in an integrated manner in close cooperation with the government through continuous research and empirical studies. The assistance of expertise of the university scholars and researchers will be also immensely useful for implementation of the policies adopted. In fact, in the context of Bangladesh Agricultural University, Engineering University, Medical University, Faculty of Science of general Universities in conjunction with NGOs, relevant research bodies and government agencies can and should take joint effort so address the problem which is of urgent necessity in the context of LDCs and Bangladesh.

The writer is the Secretary of the University Grants Commission.