

Environmental Change Spells Health Disaster for Bangladesh

by Dr Iqbal Aminul Kabir/GTZ

GLOBAL climate change has emerged as a major scientific and political issue within a few short years. Politicians the world over are shuffling for position in the wake of opinion polls showing steady escalation of public concern.

Scientific journals are crammed with comment and analysis. Forty nine Nobel-prize winning scientists have appealed to President Bush to curb greenhouse-gas emissions, proffering that global warming has emerged as the most serious environmental threat of 21st century... only by taking action now can we ensure that future generation will not be put at risk.

Largely as a result of human action profound changes are occurring in our environment. Combustion of fossil fuels is hindering the loss of heat from the earth and thus causing a rise in temperature.

This phenomenon is likely to disrupt food production, bring about inundation of low lying areas under sea water and directly or indirectly, threaten human health.

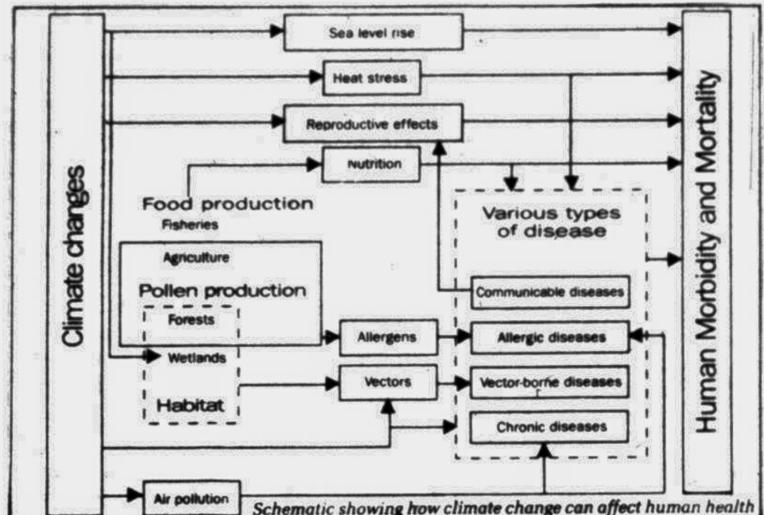
The destruction of the forests exacerbates the problems because Carbon dioxide, one of the greenhouse-gases, is consumed by plants. The basic cause of all these problems is the world's large and growing human population, which consumes so much energy and produces such large quantities of toxic wastes. Many wilderness areas have disappeared and considerable number of plants and animals have become extinct for the same reason.

The rate at which people devour resources is escalating as if the resources are limitless. If short-term interest

remain predominant catastrophe will be inevitable. There is a fundamental conflict between demands for increased production and the necessity to preserve natural complexes. The use of pesticides and fertilizers in agriculture is

the atmosphere and climate change, relatively little work has been done on the effect of climate change on health. Nevertheless, sufficient is known about direct and indirect effects of climate on health and is outlined in the

system of the body and in some cases may result in frank heat stroke. In northern part of Bangladesh heat stroke is not uncommon during summer nowadays. Malaria, amoebiasis, filaria-



leading to the contamination of not only the produce but also of water, the air and the soil. I know one Professor of Bangladesh Agriculture University who buys only infested brinjals to avoid poisons used as insecticides. In comparison with the large body of research on the relationship between the buildup of greenhouse-gases in following figure. Temperature change may have an impact on several categories of diseases, including cardiovascular, cerebrovascular and respiratory diseases. Ultra violet radiation is known to have effects on immune system. It is possible that susceptibility to important skin infections such as leishmaniasis a leprosy might be increased by greater exposure to ultraviolet light because the

expression of these diseases depend on cell mediated immune response. Increased ultraviolet irradiation can also lead to higher rate of skin cancer and cataract.

In Bangladesh the water supply system is very poor. Any further reduction of water supply due to draught will contribute to the spread of diarrhoea and other diseases spread by faecal-oral route. Drinking water and staple foods are threatened with contaminated toxic chemicals.

Increased atmospheric pollution may lead to higher rates of allergic respiratory disease. Crop failure and disruption of food supplies may cause famine in a country where chronic undernutrition is prevailing throughout the year.

In Bangladesh the main environmental problem is over-population, short-term development plans, Deforestation and Insecticide-fertilizers are manifestations only. For birth control family planning method is not the answer, it requires socio-political development.

At present 75% of greenhouse-gases are produced by 15% of worlds people living in the west. The western way of life cannot be adopted throughout the world if ecological disaster is to be averted. Fairness calls for reductions both in the birth rate in the Third World and in living standards among the wealthy.

A limitation on consumption does not necessarily entail a deterioration in the quality of life. An obsession with accumulating goods is a sign of moral and spiritual bankruptcy. Certainly there should be less emphasis on possessing things and more on developing the inner self. (In Touch)

Culture and Religion May Save Environment

Linda Bolido writes from Bangkok

CULTURAL traditions and religions may prove to be the most important ingredients needed to ensure the success of the global effort to save the environment.

"Each religion and culture has something to offer towards conservation," a report prepared by Professor O P Dwivedi of the University of Guelph, Ontario, Canada, and Nancy Nash, a freelance consultant, stated.

In the paper prepared for the recent Media Symposium on Communication for Environment here, the authors said, "Cultural traditions which keep conservation in place and education in ancient and modern forms stand out as the most important ingredients in any long-term solution (to the environmental problem)."

They added that religions can provide a powerful deterrent to man's greed and exploitative tendencies. Religions can also act as powerful counter-vailing forces against environmental degradation.

The paper by Professor Dwivedi and Ms. Nash was used as background document for a proposed Universal Code of Environmental Conduct discussed by the symposium which was organised by the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), UN Development Programme (UNDP), UN Environment Programme (UNEP), Asian Development Bank (ADB) and the Thai government.

The authors noted that as the environmental crisis deepens, people are taking a fresh look at the ancient traditions "which are probably responsible for most of what's left of nature in many areas."

The cultural heritage of the Asia-Pacific region, the percentage of religious believers is even higher.

The authors added, "Religions contain powerful messages concerning human interdependence with and responsibilities for the earth and its living treasures. Properly researched, assembled and made available to educational systems, these traditional teachings could become a force in conservation achievement."

From the perspectives of many world religions, abuse and exploitation of nature is unjust, immoral and unethical. No religion, the authors said, gives humans the right to destroy the habitat and the creation.

They cited as examples four of the major religious traditions both in the world and in the region.

Both the Old and New Testaments of Judeo-Christianity, the authors said, underscore man's responsibility towards other forms of creation. The Scriptures establish God as the sole owner of everything on the planet while man is deputised to care for His creations.

God tells man that he has no rightful ownership over the land "because the land is mine, and you are but aliens and my tenants." Psalm 24:1 states, "The earth is the Lord's, and everything in it, the world, and all who live in it."

Similarly, Islam's Holy Quran and the words of the prophet Mohammad establish man as no more than a steward of nature.

The Quran, which emphasises unity, harmony, balance and order, specifies that, "Unto Allah (belongeth) whatsoever is in the heavens and whatsoever is in the earth, and whether ye make known what is in your minds or hide it, Allah will bring you to account for it. He will forgive whom He will and He will punish whom He will. Allah is able to do all things."

Under the Islamic religion, the riches of the earth are a common heritage. Everyone may benefit from them and use them for their well-being and improvement. Thus, development should not be detrimental to the environment but should ensure its preservation.

As the Quran orders the Islamic faithful, "And commit not disorders on the earth after it has been well ordered." The Hindu religious tradition subscribes to the principle of the sanctity of all kinds of life. Only God has absolute sovereignty over all creatures, including a person's life and death.

All lives — human and non-human — are of equal value, under the Hindu religion. Every creature on the planet has the same right to existence. The sacredness of God's creation means no damage may be inflicted by people on other species without adequate justification.

People are advised to seek peace and live in harmony with nature, which is not only looked upon as a mother which sustains their life but also a part of divinity. They cannot exploit or dominate or control nature.

Hinduism demands a veneration of and respect for nature. It requires obedience to the rule of maintaining and protecting the natural harmonious unity of God and Nature.

A person is part of the universal order of things, on an inseparable system. By abusing nature, a person not only abuses God but also harms the system on which his/her own survival depends.

The practice of Buddhism revolves around compassion, respect for and tolerance of every human being and all other creatures on the planet. Buddha teaches his believers:

"Know ye the grasses and the trees... Then know ye the worms, and the different sorts of ants... Know ye also the four-footed animals small and great... the serpents... the fish which range in the water... The birds that are borne along on wings and move through the air..."

While a person is considered a higher being, he/she is still a part of nature. To abuse or disregard laws of nature is to court disaster.

A Buddhist is to abandon causing harm to all other beings, even if his/her dreams.

Professor Dwivedi and Ms. Nash stressed that religion, by creating an appropriate awareness, "helps humanity to realise that there are limits to its control over the animate and inanimate world and that its arrogance and manipulative power over nature can backfire." — Depthnews Asia

War over Fresh Water Threatens if Nations do not Share

Francis Mwanza writes from Dublin

A call for new measures to tackle the emerging global "fresh water" crisis has gone out from a conference of 500 experts from 113 countries. Unless action is taken now, the meeting in Dublin was told, lack of water could threaten world peace.

A plan of action is to be put to the United Nations Conference on Environment and Development — the so-called Earth Summit — in Rio de Janeiro in June.

The International Conference on Water and the Environment in Dublin wants "concrete action... to reverse the present trends of over-consumption, pollution and rising threats from drought and floods."

Its Dublin Statement recommends action at local, national and international levels to tackle water resource problems, based on several guiding principles.

One is the pricing of water: "Water has an economic value in all its competing uses, and should be recognised as an economic good."

Although skirting away from suggestions as to how water will be priced, the conference argued that "past failure to recognise the economic value of water has led to wasteful and environmentally damaging uses of the resource."

A conference document said: "Water pricing is a very important instrument for stimulating efficient use of water. Users not paying the real cost have little incentive to conserve water, whereas progressive tariffs penalising excessive use both dampen demand and reduce waste."



Over 1.5 billion people do not have safe water, and over 2 billion lack safe sanitation - Human Development Report

on water — long considered a free natural resource — will not be an economist's simple arithmetic nor a politician's campaign slogan.

It raises social and cultural problems in many a developing country, especially for the urban poor and rural populations. Faced with the "choice" of free contaminated water from surface sources or priced clean water, the poor may have to

The most important conference on global water supplies yet held has called for urgent measures to secure the world's fresh water resources. If the nations cannot agree how to share them, delegates were told, conflict could result. A plan of action, reports Gemini News Service, is to be put to the big environmental conference to be held in Brazil in June.

opt for the obvious — and pay for it with sickness and disease.

In developing countries, contaminated water is believed to cause up to 80 per cent of diseases and 33 per cent deaths.

Speaking for the 24 UN organisations co-sponsoring the conference, Dr Edouard Saouma, Director-General of Food and Agriculture Organisation, said: "To implement this conference's recommendations, policy and institutional changes will be required in many countries."

"Politics may have to be revised to promote the integrated management of water resources and access to adequate supplies of fresh water by all those who need it."

Perhaps much more than policy changes, implementation of action programmes for water and sustainable devel-

opment will need substantial investment.

According to UN estimates, about \$36 billion is required yearly to attain the goal of providing everyone with safe water by the year 2000; \$15 billion for water supply and \$21 billion for sanitation programmes.

With the world's rich nations gripped by recession and suffering from aid fatigue, de-

veloping countries are being asked to find new ways to raise more cash to fund vital water development projects or turn to cost-effective ways of implementing them.

The Dublin conference, which also called for water development and management "based on participatory approach involving users, planners and policy-makers at all levels," proposed that the first full assessment of implementation of its water programme should be undertaken by the year 2000.

An international water council is recommended to act as a global watchdog on the threatened resource.

The conference, organised by the World Meteorological Organisation and hosted by the Irish government, was the first major meeting of experts from around the world to focus on the holistic management of

water.

Development programmes have stressed fresh water ecosystems. As a result modification of fresh water systems is resulting in loss of aquatic species and habitat. Almost everywhere rivers and lakes are increasingly contaminated by chemicals from industries and sewage plants.

Profligate water use and neglect of pollution control have already had damaging environmental and economic effects around the world's major cities.

In many developing countries rivers have become open sewers, devoid of fish. Less visible, but equally threatening to future water supplies, is the depletion and degradation of groundwater.

Over-abstraction of groundwater has led to serious land subsidence. Parts of eastern Bangkok, for example, are now below sea level. Every year the city sinks 10 centimetres due to unlicensed industrial abstractions from deep wells.

The deterioration of water quality is, however, said to be much more serious in lakes "due to the fact that inflow materials such as silt, toxic pollutants and nutrients accumulate in water bodies," leading to increased cost of water treatment for domestic use, damage to agriculture and fisheries.

Some lakes like the Dianchi Lake near Kunming City, the capital of Yunnan province in China, show they are "dying".

"This development must be stopped and reversed", urged Dr H. Tessenoff, president of the International Water Supply Association. "The use of sophisticated water treatment technologies to produce drinking water with ever increasing quality can be no alternative for comprehensive environmental protection for the sake of sound ecosystems." The scenario if crisis is not averted in time is disturbing.

* UP to one-quarter of the world's reliable water supply may soon become unsafe for use.

* Arid countries will face a major water crisis within the next decade.

* Water may risk world peace.

Said Mustapha Tolba, executive director of the UN Environment Programme (UNEP): "As demands for water grows the competition will grow more fierce, more violent. With no clear consensus on how best to use shared water resources for the benefit of all the riparian states, that competition will become conflict." — Gemini News

(Francis Mwanza worked as a journalist in Zambia. He is now with the UN Food and Agriculture Organisation.)

Mallorca, Mud and Monitoring

by Brian W Walker

I have a friend who is something of a cynic. When he heard I was about to visit the 1700ha wetland called S'Albufera in the northeast corner of the Mediterranean island of Mallorca, he expressed surprise. He takes his holidays in Mallorca, and knows the

flowers.

Down the ages, the wetland has been used as a rice-growing area for local populations, and in the last century, to grow the grass, "phragmites", and sedge, "cladium" which



The purple heron is one of the many species of bird still commonly found in the S'Albufera wetland on the Mediterranean island of Mallorca.

area well. "Do you realise," he asked, "that you are going to spend your time wandering around an old swamp — a bog?"

Yet swamps and old bogs are amongst the most interesting and valuable habitats on our planet. The history of this particular wetland goes back to Roman times, when the occupying forces soon learned that as a staging post for migrant birds, it could provide a ready supply of food for the table. Purple gallinules and night herons were considered to be gastronomic delights.

The area is still rich in birds, fish, insects and plant life. Over 200 species of birds have been observed, the majority being marsh birds such as the moustached warbler, which has its greatest Concentration in Europe here. Black-Winged stilts, purple herons, and the Roman favourite, night herons are common. The rare Eleanor's falcon hunts regularly over the reeds, as do ospreys on the open waters.

The flora is equally interesting, although less varied. Reeds and sedges dominate with reedmae in the channels. Dykes are lined with elms and poplars, and pines and junipers are found along the coastal dune strip. There are some tamarisk and orchids, including a marsh orchid — now rare and localized — which grows to one metre in height and carries colourful

provided the pulp for paper making. An old building at the entrance to the wetland was converted into a paper mill which now, although fallen into disuse, is of historic importance. There are plans to preserve it and even bring it back to use.

Certainly by the 17th century, local people had started to make "marjats", which are small plots, surrounded by channels which ultimately covered most of the wetland. Mud and sludge were piled together and then capped with a layer of fertile soil high enough to permit cultivation. Fresh water from what has proved to be a very complex, but intriguing hydrological system was protected from the sea water by dykes. Irrigation was unnecessary as water from the channels in the subsol rises by capillary action to the roots of plants.

In the 1970s, a former Vice President of WWF and later Founder Chairman of Earthwatch Europe, joined forces with local environmentalists to persuade the Spanish and Balearic governments to preserve this wetland as a nature park. It was essential to stop the encroachment of yet more hotels on what is one of the last remaining wetlands of the Mediterranean basin.

Max Nicholson suggested to his friends that through

Earthwatch, supported in 1991 by WWF International, they should try to establish a pathfinding observatory for measuring and monitoring environmental change on the wetland. The science would be rigorous, attempting through an interdisciplinary approach to identify and measure com-

prehensively every ecosystem in the reserve. Then, each year, the exercise would be repeated, so as to plot the rate of environmental change and establish the causes and consequences.

Earthwatch itself is a kind of "merchant bank" for the field sciences, placing human and capital resources behind Principal Investigators. University College London provided the first team of 20 scientists, and the University of the Balearics also plays an active part. Dr Joan Mayol, the Director of the Park, and his team are essential to the success of the project and provide continuity from year to year. Earthwatch lay volunteers act as the "foot soldiers" for the scientists — identifying, monitoring, recording, photographing and sampling.

Some seven to ten years will elapse before any wider implications may be derived from the results of this comprehensive investigation. It is clear already, however, how local management decisions create environmental change, whilst regional influences from continental Europe to the north, and Africa to the south, also have their effect. It remains to be seen — although this is one of the objectives of the investigation — whether and how global environmental change is affecting the wetland. — WWF Features