storage during floods.

Adverse payoffs of embankment

ALBELEE HAQUE

MBANKMENTS are the extravagant expenses of unnecessarily restraining the energetic rivers of the Bengal delta. These engineering structures are outmoded and even problematic with unfathomable maintenance costs. Lakes, ponds and rivers -- the Ganges, Brahmaputra and Meghna are integral parts of Bangladesh land features.

Drastic changes to natural landscape will render land ill suited for deluge causing poor drainage, prolonged floods and water pollution. Some suggest keeping embankments low so water and fertile silt can spread across land nurturing floodplains as was done before embankment era.

Flood control practices of modern day relied upon "just build the dike higher" approach despite repeated failures and without public debate. The disjointed efforts and nonalignment between river dynamics and landuse/human investments have resulted in larger emergency flood recovery expenditures.

We would rethink the argument behind flood control strategy that just failed, if we're conscious about the misery of people entrapped by embankments. During September 2008 Bangladesh flood 60 m of Goalando Dam disappeared in the Padma, flooding 20 villages. Efforts of local Water Development Board and Shena Kallayan were futile to save Debgram/Bhabanipur areas from flood losses due to swift current/high flow.

Yet, the writer wonders who so wrongfully has given the name "Kirtinasha Padma". It is unrealistic human expectation to ask the majestic rivers of the Bengal delta to adjust to land-based enterprises as population increases and economy grows.

Given the effect of climate change and sea level rise, it has become increasingly critical to enhance awareness, at local and government level, to protect lakes, ponds and rivers from thoughtless development plans and human intervention.

To themselves from 2007 cyclone Sidr, 650,000 people fled to evacuation centers and 3.2 million more were evacuated, said Ali Imam Majumder, a senior government official in Dhaka. The 150 mph wind "swept in from the Bay of Bengal, buffeting the southwestern coastal areas within a 155-mile radius with heavy rain and storm surges predicted to reach 20 feet high".

What are the technological means to adopt with respect to sea-level rise? It is undeniably true higher polders will not withstand the force of nature.

First, we ought to understand, fretting with the natural working of the rivers does not fare well. High priority should then be given to maintenance (or increase) of coastal forests that stabilize shoreline position and

China's plan to build a series of dams in South Tibet worries us. Experts say, if either the water discharge or sediment load of the Ganges-Brahmaputra is tampered too much by damming/diversion in Nepal, India, China, the effects of sea-level rise could be potentially ominous for Bangladesh.

dually serve as a buffer for storm surges (Goodbred, Vanderbilt University). The time ahead will be particularly painful for people to watch or experience unless we open up to alternatives, such as active riparian land revegetation and forging partnership with watershed neighbours/civil society.

China's plan to build a series of dams in South Tibet worries us. Experts say, if either the water discharge or sediment load of the Ganges-Brahmaputra is tampered too much by damming/diversion in Nepal, India, China, the effects of sea-level rise could be potentially ominous for Bangladesh.

We wish fossil fuel emissions to be on a lower trajectory as the northeastern states of US implement "carbon cap-and -trade" law, modeled after 3-year old European experiment to tackle climate change. This is the most serious regional effort in the US that puts limit on CO2 emissions from utilities making them pay for each ton of pollutants

(NewYork Times, Sept 16). However, being at the mercy of developed nations to solve carbon crisis in the backdrop of economic gloom, Bangladesh needs to engage in talks with riparian countries and scrutinize its own policies. More industrial zoning (second Poverty Reduction Strategy Paper) without consideration to protect buffer areas along rivers could make the land vulnerable to erosion and flooding swapping with short run profit.

Diplomatic savvy and regional cooperation for uninterrupted Ganges-Brahmaputra water/sediment flow have become a monumental necessity and should be part of flood policy formulation at watershed scale for the subcontinent.

Of particular concern is China's Tsangpo (Brahmaputra) hydroelectric plans. If constructed, the power plant would produce 40 Giga Watt of power and would have twice the output capacity of the Three Gorges. The project would provoke tension between China and India, but the consequences could be fatal for Bangladesh, as the Brahmaputra carries a much bigger sediment load among all rivers that enter Bangladesh.

Intergovernmental long term buffer agreements at regional level and also at local level can protect river corridors from future encroachments. Flood losses and economic burden of rehabilitation of poverty stricken people plus government borrowing can be lessened by low cost, effective ecological solution to deal with river overflows.

Perennial grass that has grown deep roots in a hundred years has special water absorbing function. The Hokiloki Haor, Sylhet, one of the largest in Asia and all other such

August 2008 Bihar floods of Kosi river in her recent article that five decades of embanking have increased Bihar's flood-prone area by a staggering two and a half fold. Jamuna embankment in Sariakandi is another failed protection rendering 3000 homeless at the section where it breached; several lakh were trapped in north Bengal (The Daily Star Sept

wetlands, dighis and lakes play the role of key

Chasing rivers with embankments is no

solution. Chitra Padmanabhan writes about

attenuation assets and provide required

We should redouble effort to disentangle ourselves from the investments in costly engineering projects that are band-aid solutions adding to recurring flood losses and untold human suffering. The long term challenge is to have predictable investments with less erosion.

The Worldwatch Institute research cited dams and channelization as the two most pervasive threats to freshwater ecosystems and fish propagation, dramatically hurting

diversity and species abundance. Shall we recall Tagore's teaching and not loose our way "into the dreary desert sand of dead habit"? People across US are changing the ways they look at rivers, said Tom Ardito, the director for the Centre for Ecosystem Restoration, from something that cuts a town in half to something that can bind a community together.

In the 19th century people treated rivers as source of hydroelectricity and in the 20th century as open sewers but in the 21st century, we've begun to realize that rivers are assets to be protected from pollution caused by dams or untreated discharges. The backwaters of impounded rivers are more turbid with low flushing rate, where pollutants sit

Hydropower dams in China would shift environmental and economic problems to their future generations and create more climate refugees in Bangladesh. Solar, wind turbine, geothermal are all clean energy sources that can reduce fossil fuel dependency without bringing the world to its ecological knees. It is more of an ethical ques-

Eco-friendly public transportation design and compact growth would leave open space for green villages, picturesque beauty of national parks/forests and scenic river ways in nodimatrik Bangladesh.

Rivers do not know political boundaries. It is a hope that upstream countries will be sensitive to the misery created by dams/barrages locally and beyond national borders.

Albelee Haque is a scientist working for the department of environment in Boston and a member of Bangladesh Environment Network.

Although urbanization, industrialization and motorization are essential for economic development, urban people always intend

for as much possible calm and quiet life. Noise pollution is a neglected issue in Bangladesh but it is a severe health hazard. For

the physical and mental health of the urban people, particularly of the children, it is imperative for the decision makers, leaders,

The sunshine walk from Toronto to Ottawa

AFSAN CHOWDHURY

group of like-minded Canadians walked from Toronto to Ottawa from October 4 to 20, to deliver a letter to the PM of Canada, Stephen Harper, asking for rational environmental policies and raising awareness on the critical issue. The walk was inspired by Mr. Dewan Shuaib Afzal, a Canadian of Bangladeshi origin, who had walked from Toronto to the Niagara Falls, calling for an end to racial profiling in 2004. The Sunshine Walk was supported by friends and activists and endorsed by many Canadian organisations

The slogan of the initiative was "Rain or shine -- we'll walk for sunshine.

The organisers spelt out their objectives in a pamphlet on the walk saying: "Every hour, the sun beams as much energy at the earth as humanity collectively uses in a year. All we have to do is harness it. Clean, affordable, renewable and sustainable energy such as solar, wind, geothermal and marine power exists all around us. We don't need dirty, dangerous, expensive energy like oil, gas and nuclear when we have the knowledge, ability and means necessary to build a better world. A better world is necessary -- a better world is possible. In fact, a better world is coming. Combining the best ideas of our best thinkers and working together, we can and must inspire our government to enact policies that are just and ensure a sustainableworld."

In specific terms, they stated the national goals and the international obligations of the Canadian government.

They said: "We know that people in areas such as the Arctic, Bangladesh, Darfur, the Sahel, Tuvalu, the Maldives, the Amazon, parts of China and many others are already suffering the impacts of climate change. Canada is repeatedly called upon to meet its commitments, demonstrate leadership in this crisis and to act promptly and progressively to curb greenhouse gas emissions. Global warming must be kept as far below 2° Celsius as possible in order to prevent catastrophic consequences -- this means developed countries such as Canada must reduce greenhouse gas emissions by 25 to 40% (from 1990 levels) by 2020.'

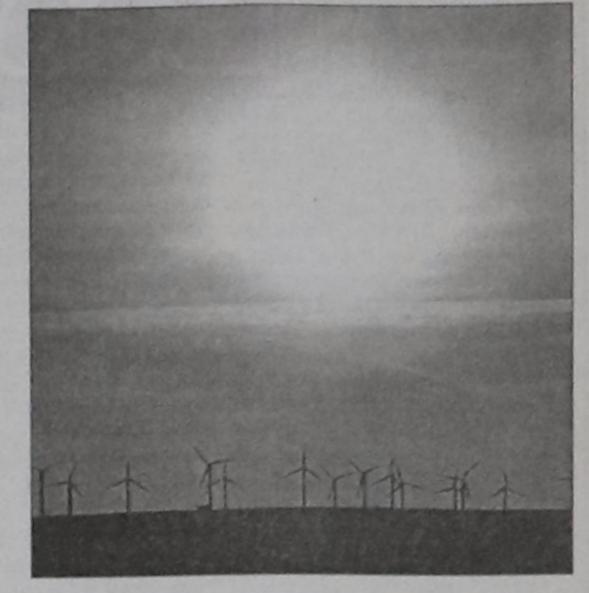
The Sunshine walk moved through many towns and met many friends along the way in places such as Pickering, Darlington, Oshawa, Port Hope, Cobourg, Trenton, Belleville, Napanee, Kingston, Godfrey, Sharbot Lake, Perth, Carleton Place and others.

Throughout their journey, they met with elected public officials including mayors and councilors, social activists and concerned citizens. They talked about what could be done to achieve a more environment friendly lifestyle, solutions for climate change and mobilisation for a greater duty towards saving the world by meeting the promised obligations made at the Kyoto

The group maintained a blog on their journey. Adrianna Mugnatto-Hamu, who kept everyone in touch with the walk, mentions the first day. An excerpt is given

Saturday, October 4, 2008:

"It's been a thrilling and exhausting day. It's approaching midnight and there's too much to possibly describe in a single post. So I'll say some thank yous and



focus on one observation. Thank you to Dewan, the inspiration for this walk. By the end of the day, he was clearly exhausted but kept trudging on with tired determination. Thank you Rita, for your wisdom and eternal good spirits. Rita brought her bike because of concern that her knees would not survive, and, as a result, seems to be traveling greater distances going back and forth between supporters and walkers and running errands in between. Thank you Kim, Stuart, Alex and Mustaq, our permanent support network who look after us. Thank you to all the people who came out to walk with us today, friends, supporters, candidates, Dewan's endless stream of cousins. Thank you to the many people who are supporting us along the way with offers of food, shelter, errands and so on.

"Thank you to Stephen Scharper, Dorothy McDougall, Dave Martin, Carolyn Egan, Eddy, Misha, Waeza and the other young people who so inspired us with their thoughts at the kickoff, which now seems eons ago. Thanks to people like John Bell, Rich, Paul York and Michael who helped make that kickoff a success. Thanks to the crowd of people who escorted us through the city. Thanks to the nice policemen who keep an eye on us to make sure we're safe. Thanks to Betty Anne, whose house I'm staying in and whose computer I'm writing this note on.'

Although the walk was intended for all in Canada, there was particular focus on Bangladesh. Everyone wanted to draw attention to the plight of Bangladesh and the need to support its efforts to battle climate change. Mr. Dewan Shuaib Afzal, who is 63 years old and is a bypass operation survivor, walked all the way and kept a walking stick just in case.

The walk ended on October 20 and a letter was handed over to the PM's office. The group, meanwhile, has already started to organise several future events. It has led to a great deal of attention and awareness, and the members are now planning more events.

Afsan Chowdhury is an eminent Bangladeshi journalist and writer.

Sound pollution -- a severe health hazard

FARHAD TUHIN

EVEL of sound pollution (also termed as noise pollution) in Dhaka city is now a major concern for the general people because it has already exceeded the tolerance level. Because of this sound or noise pollution millions of people in the country are exposed to a number of health risks -- from deafness to heart attack. On city streets noise pollution can be caused by hydraulic horns of vehicles (the most harmful offenders), microphones and cassette players. The hydraulic horns used by buses, trucks and taxies in the crowded city streets are dangerous for human being. This is also how noise pollution in Dhaka City is affecting the hearing power of thousands of children everyday. Noise intensity is measured in decibel (dB) units. At 45 dB of noise the average person generally cannot sleep. At 120 dB the ear registers pain; hearing damage begins at a much lower level, about 85 dB. Experts say, if a child below three years of age hears a horn emitting 100 dB of noise from a

close range, he or she might lose his or her hearing power. A child's health may also be adversely affected by loud sounds from the radio, television, cassette players and, not speak of, microphones, also the sound of mills and factories and any loud noise.

According to the World Health Organization (WHO), generally 60 dB sound can make a man deaf temporarily and 100 dB sound can cause complete deafness. Now the noise of any busy street in Dhaka has been estimated at 60 to 80 dB, with the sound of vehicles being 95 dB, loud speakers 90 to 100 dB, mills and factories 80 to 90 dB, restaurants and cinema halls 75 to 90 dB, festivals 85 to 90 dB, scooter or motorbike 87 to 92 dB and trucks and buses 92 to 94 dB. But the the bedroom, 40 dB in the dining or drawing room, 35-40 dB in the office, 30-40 dB in the class room, 35-40 dB in the library, 20-35 dB in hospital, 40-60 dB in a restaurant and 45 dB in the city at night. When

Koshi embankment breach victims

Noise pollution also causes peevish temperament, affects lungs, hampers the intellect of the children their studies. desired sound measure is 25 dB in pollution seriously affects expecting the sound exceeds this limit, there mothers. It has been observed that occurs noise pollution. Noise pregnant mothers living near big pollution beyond the limit destroys

planners, engineers and concerned persons to keep the noise level within the acceptable limits. hearing and might even lead to the airports give birth to more crippled, losing of one's mental balance.

and makes them apathetic towards The DOE (Department of Environment) states that noise causes mental and physical illness among the people. It causes high blood pressure, headache, indigestion, tachycardia, peptic ulcer, and also affects sleep. Anyone may become deaf for the time being if 100 dB or more noise pollution occurs for half an hour or more in any place. Working in an atmosphere of loud noise for a long period can cause complete deafness to any person. Any sort of noise

deformed and immature children than those living in other places. According to the DOE, the per-

fect sound condition for Bangladesh is 45 dB for daytime and 35 dB for the night in peaceful areas, 50 dB for daytime and 40 dB for the night in residential areas, 60 dB for the daytime and 50 dB for night in mixed areas (residential, commercial and industrial localities), 70 dB for daytime and 60 dB for the night in commercial areas and 75 dB for daytime and 70 dB for the night in industrial areas. While another survey of DOE shows that noise pollution has increased alarmingly in different parts of Dhaka city. This survey indicates that at Motifheel Government High School the noise level is 83 dB during daytime and 79 dB at night, at Azimpur Girls' College 80 dB during daytime and 74 dB at night, at Shaheen School

the noise level is 83 dB during daytime and 74 dB at night, at Bangabandhu Sheikh Mujib Medical University 82 dB during day and 74 dB at night, at Dhanmondi Government Boys' School 80 dB during daytime and 75 dB at night, at Tejgaon Girls' College 75 dB during daytime and 67 dB at night, at Shishu Hospital 72 dB during the day and 69 dB at night, at Dhaka Medical College Hospital 80 dB during the day and 69 dB at night and at Mitford Hospital 76 dB dur-

ing day and 73 dB at night. However, the following recommendations might be helpful in order to reduce the sound pollution at tolerance level: (1) Implementation of the Noise Control Rules, 2004; (2) Complete banning of the vehicular hydraulic horns in any place of the country; (3) Expanding the monitoring programmes at the main traffic

points to determine whether the vehicles follow the orders or not; (4) Improving traffic control; (5) Relocating the bus/truck terminals out side of Dhaka city; (6) Banning loudspeakers from processions and out side meeting areas, high volume of audio players from roadside small business enterprises/shop; (7) Banning industrial activity in residential areas; (8) Establishing underground and overhead transportation system in the city; (9) Train movement within the city areas to Kamlapoor must also be restricted from 6am to 6pm. Beyond these hours all trains bound for Dhaka must terminate journey at Tongi, Uttara or Cantonment station; and (10) Enhancing public awareness of sound pollution.

Although urbanization, industrialization and motorization are essential for economic develop-



ment, urban people always intend for as much possible calm and quiet life. Noise pollution is a neglected issue in Bangladesh but it is a severe health hazard. For the physical and mental health of the urban people, particularly of the children, it is imperative for the decision makers, leaders, planners, engineers and concerned persons

to keep the noise level within the acceptable limits. It is time for NGOs, the media, the related individuals and the government to work together to reduce the noise level so that in the long run people can eradicate noise pollution from the country once for all.

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Giant butterflies on way to extinction

A key to biodiversity conservation must be protected

DR. M A BASHAR

UTTERFLIES are natural biotic key to biodiversity conservation as well as conservation of any bio-resource in nature. Species 'assemblage and species' richness in any ecosystem, specially in the forest ecosystem, are significantly preserved by the 'dynamism utilization' of butterfly-plant interaction in natural condition. This trophic dynamism happens in nature when the wild state of the butterfly-plant interaction is not disturbed externally, specially

by the humans. Butterflies are not only very beautiful but also very sophisticated and eclectic creatures. They are highly specific in respective plants selection for trophic relations. They are in strong interaction host plants, nectar plants and shade plants. Assemblage of the three types of plants and natural butterfly multiplication is the process of butterfly-colonization and butterfly-survival. This process has been seriously affected in Bangladesh. The rate of deforestation and reduction of essential plant species on which the butterflies depend stands dangerous. In our forest areas all butterflies are threatened because of their host plant reduction. But the largest butterflies (two species known as birdwings) are serious victims of the situation. They are going to be extinct very soon if necessary measures are not

Butterfly-plant relations and butterfly-survival As I have said, butterflies are very eclectic for selection of their host plants. This establishes a bonding for maintenance and sustenance of life cycle in butterflies with phenology of host plants. After 3-4 days of emergence, the female giant butterfly becomes ready for laying eggs. As she cannot lay eggs on any plant in her vicinity, she

taken immediately.

becomes just mad to find her host plant on which egg laying could be done. The ethological behaviour at this movement is very remarkable. The area where females find host plant make there territory. Attracting of male butterflies happens there and then mating occurs. This happens to be the first step of colonizing process.

An adult butterfly visits many flowers, but takes nectar from few selected plants. Most interesting fact is that, a female butterfly lays eggs on plants belonging to a certain family on which the larval development can take place. It means that the female adult does not lay eggs on plants or plant which cannot provide food for the larvae.

It is to be noted that the existence, multiplication and abundance of host plants and other related plants depend on the available activities and functioning of the butterflies; and on the other hand, maintenance and survival of butterfly population depend on the availability and abundance of host plants in the wild state. The reciprocal activities between the butterflies and their host plants cause gene-flow-functioning for floral and faunal species richness. How this species richness happens? Butterfly needs three types of plant population for its life sustainability and population multiplication. First, is host plant that is required for larval growth and adult production; second, is the nectar plant that is needed for the supply of nectar as food for adult activities and sustenance; and third is the shade plant, that is required for taking shelter in the driest day when it is too hot or in the wet days when it rains. The assemblage of three types of plants are needed absolutely without interference of human beings. In connection with that, the maintenance of humidity and other biotic factors interacting together becomes prerequisite for keeping butterfly population in a place at its general equilibrium position (GEP). Then harvest principally in the Australian region. Females of



from butterfly population could be made.

If maintenance of this assemblage is hampered, specially in the wild state, then the sophisticated animal butterfly cannot survive there. So, destruction and non-availability of host plants, the nectar and shade plants causes the extinction of the butterfly species. And once a butterfly species becomes extinct; deforestation starts at the molecular level. Consequently forest starts loosing its status, ultimately after few years forest gets poor and poorer in its existence. The largest butterfly

Birdwing butterflies are the largest butterflies in the world. They belong to the order Lepidoptera and family Papilionidae. The family Papilionidae contains about 700 species distributed throughout the world. They are generally powerful fliers and are among the most conspicuous in the countries where they found. This family includes some of the most splendid of all butterflies. Particularly outstanding are the enormous birdwing butterflies (Ornithoptera spp.), found

some of the Ornithoptera spp. have a wing-span of 25cm or more. The males, although smaller, are often arrayed in dazzling gold or green.

In Bangladesh Ornithoptera is not available, but we have two species of birdwings in very restricted areas of forests at present. These are Troides aeacus and Triodes helena. They were distributed all over the forest areas of Bangladesh. The population of the birdwings was large and noticeable. At present their distribution is absent almost in all the forest areas of Bangladesh because of tremendous reduction of their host plants. In connection with this, the birdwings are seriously disturbed in their life style by the humans in the wild state. These butterflies are not only beautiful creatures but also very touchy and sophisticated animals.

In Troides helena, wingspan varies from 15 cm to 19 cm (Bangladesh variety). Fore wing is black, hind wing yellow with black markings, including marginal spots along the hind wing margin, but no internal black dusting on the inner edges of these spots. Male has an additional black submarginal spot in space two and conjoined with marginal spot. The female differs from the male in having another complete series of submarginal black spots and not conjoined with marginal spots.

In Troides aeacus, wingspan varies from 14 cm to 18 cm (Bangladesh variety) and more. T. aeacus is similar to T. helena but hind wing has black dusting on the inner edges of marginal spots in space 2, 3 sometimes in space 4, especially in male. In addition, the female differs with pale streaks in the outer part of the fore wing cell. Research findings

Researchers of EBBL (Department of Zoology, D.U.) have been working since 1998 on the subject of searching host plants of butterflies in the

forests of Bangladesh. They have successfully found the host plants of birdwings in very restricted forest areas. This plant is one kind of climbing vine and uses larger trees to survive. The plant also requires some hedge-supports among the tree populations as underground vegetation. Distribution of the host plant has been tremendously reduced. Only a few plants are found in the region of Sylhet, Chawtali and Lawasora forest areas. In the forest areas of Fashiakhali, Eid Gaon and Eid Ghar of Cox's Bazar district very small population of the plant is still surviving. Researchers of the EBBL have found them after searching for long ten years.

So, the distribution of the birdwing has been confined to extremely restricted areas in our country. As the host plants are surviving under extreme hardship and at the serious risk-stage of extinction, the birdwing will also be extinct very soon in the wild. It is to be noted that, in the forests of Modhupur, Mymemsingh and Bhawal National Park the birdwings are no more avail-

The researchers have found some vital key factors for colonizing the birdwing butterflies by establishing the population sustenance of host plant and the assemblage of its supporting plants in the forests. The colonization of the nectar plants and shade plants together with host plants provides good status of a forest ideal for survival of birdwings. Extinction of the vine host plants for the largest butterflies must be sopped by us without any delay, otherwise there no way will be left to protect the giant butterflies, (natural wealth of the country and the forest).

Suggestions For the necessary action to protect the largest butterflies and to utilize their role in the economic, environmental, conservational and

ecotouristic welfare the following may adopted. Immediate adoption of the some may land us in the state to even protect the forest ecosystem as a

 Necessary mechanization for augmentation of the species richness and species assemblage of both flora and fauna should be taken into consideration scientifically on immediate "Birdwings-plant dynamism" should be made

practicable scientifically in the forest areas immediately in the countries where still the trace of birdwings' 'natural availability' is noticed.. This will make the forest status sustainable in the practicable areas very quickly.

· Butterfly-colonization mechanism (scientific process) should be immediately established in the forest areas which will make it easy to prepare the butterfly park for ecotouristic and economic advancement.

 Butterfly-plant association and dynamism should be made practical in the interest of augmentation of the ecotourism industry in the forest areas.

Ecotourism industry must be made bioresource oriented, local people participatory and endemic flora-fauna enriched. Forest officials should be very friendly and

helpful in welcoming the real researchers with providing possible logistics and spaces. Collaborative efforts are necessary both from the part of scientists and forest administration

for making the research environment more practical and effective. · Finding out arrays of utilizing butterfly resources as the key tools for economic, environmental, conservational and ecotouristic

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welfare and effectiveness.