

Tipai dam and science

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ANCIENT priests used water for healing. The Greek Island of Crete, which is the site of Greek God of healing, and other such temples in the world, had always been situated near freshwater sources. However, the mega dams/barrages built in the 20th century (such as 1970s Farakka barrage, 1990s Gazaldoba barrage and more recently the Three Gorges dam, as well as the hotly-debated and proposed Tipaimukh dam) are threatening the freshwater need of millions of people and wildlife. The situation is already too painful and dire for millions of people inhabiting the Ganges-Brahmaputra-Meghna basin.

Unfortunately, the Chinese government and the Yangtze River's Water Commission underestimated the detrimental impact on ecosystem by the Three Gorges dam project, holding up large quantity of water for generation of hydroelectricity. Infrastructure building without science-based, long-term environmental impact assessment is foolhardy. Short-term profits and rationalisation versus reasoning sideline investments in science education, and detailed science-based environmental impact assessment.

The Daily Star (DS) article written by Mr. Gowher Rizvi (Dec 13) entitled: "Tipaimukh: A plea for rational and scientific discussion" was recently brought to my attention through discussions in the BEN forum.

Clearly, Dr. Haris being a scientist, was puzzled by the title of Gowher Rizvi's DS article and its quite frequent mention of a scientific discussion. Dr. Haris cautioned that the region (Tipaimukh site) is the sixth most active volcanic region in the world.

In my opinion, Tipaimukh dam is a direct threat to both Indian and Bangladeshi populations and ecosystem of the entire Ganges-Brahmaputra-Meghna basin. Why?

The Tipaimukh dam proposal is based on less than scientific *ad hoc* assumptions by the Indian authorities and outdated studies by Bangladesh, FAP-6. In addition, it ignores the latest and novel technologies available for water and energy efficiency. For example, the precise drip irrigation technology can eliminate huge water/energy waste as a result of conventional flood/spray irrigation, as currently being practiced by Indian farmers, due to the lack of government incentives and low or no interest loans.

In the DS article, Mr. Rizvi admits that "much of the

environmental impact -- flooding, submerging of land, displacement of people, disruption of livelihood and destruction of wild animal habitats" -- would presumably occur. Add to that the impact on fishing/rice farming, and the undesirable consequences on the health of the people who rely on fish as their sole source of animal protein. Other countries in the region are seriously considering such issues. For example, Laos and other countries of Asia's Mekong Basin have decided to suspend the construction of a dam across the lower main stream of the Mekong River and asked experts from a non-riparian country (Japan) to assess the impact of the project.

Another point of scientific discussion is that conventional intellectual may not suffice to resolve the Tipaimukh or the Teesta water-sharing dispute. Teesta River basin is home to 21 million people in North

Bengal who rely heavily on water-intensive rice cultivation; Bangladeshi farmers are suffering due to drastically reduced flow (drought season) as a direct outcome of the Gazaldoba barrage. Science is forward looking in the 21st century. Imitation is considered crucial in empathy, which is the intellectual capacity to perceive the rational thinking and also emotional feeling of others.

Perhaps, the other DS articles (on Dec 20 by M. Inamul Haque) on Tipaimukh are better reflection of the reality. Also note the write-up by Khalequzzaman (DS, July 12, 2009): "Tipaimukh dam: Blessing or peril for Bangladesh?"

Dams are responsible for salinity and ecosystem fragmentation. This writer recommends that UN put a moratorium on all large dam constructions until 2041. The Punam Pundey (IDSA forum, December 20) article, suggesting that the deltaic Bangladesh should not be denied more water per capita than India (in the Ganges basin) to keep salinity under control, is a commendable ideaworthy of a genuine scientific discourse.

Please note, the example of mindfulness and ~ 80,000 ecologically scaled hydropower dams operating

in rural China is illuminating. Here are other innovative alternatives for renewable energy: high efficiency solar cells, biogas technology. Water vapour is considered a greenhouse gas. Mega dams/barrages can alter the river dynamics and natural balance of evapo-transpiration and cloud cover by wasting huge amount of water through evaporation loss.

Another example of negative impact and mitigation efforts to undo human interference with river flow: In the US, the Great Basin Unified Air Pollution Control District (GBUAPCD) recently decided to un-divert water to the Owens River, because of USEPA's consent order to control dust or PM10. The dust/air pollution was a direct consequence of a 1926 water diversionary project by Los Angeles impacting the air resources of California. Dust or harmful PM10 can travel across state lines. The GBUAPCD is also using drip irrigation to control dust and bring back life to the Owen River's ecosystem. Extreme climate/weather has made dust control a top priority.

As a BEN volunteer, I thought that I should join the discussion, with deep empathy for those in India who might go through much suffering due to the foolhardy Tipaimukh dam project as proposed. In fact, my per-

ception of the DS article by Mr. Rizvi is different than that of BEN. It seemed that Mr. Rizvi wished to initiate a debate/scientific discussion on Tipaimukh. Scientists must be open-minded for purposeful discussion and willing to accept change.

Feedback from concerned citizens to provide constructive criticism may eliminate scientists' unintended errors. New research and studies done by a Harvard scientist suggest that neurosurgery in the corpus callosum (neurons connecting the two distinct hemispheres of human brain) may interfere with tasks related to complex groupings or categorisation. Even, in a normal person, the right brain may not be able to perceive reality (visual information), if the left brain is working too hard. A central theme of science is to characterise fact versus error.

The Farakka barrage is more than 100 miles from the Bangladesh shoreline, but its negative impact on salinity intrusion, and the drying up of the Gorai and other rivers in southwestern Bangladesh are documented facts. Similarly, the Barak-Surma-Kushiyara constitute a continuous riverine system (home to 40 million in Sylhet region), which is emptied in the Bay of Bengal through the Meghna River. Any upstream human interference with the natural river flow or sediment transport will be felt all the way to the Bay of Bengal. Tipaimukh is, therefore, a threat to people's livelihood in Sylhet region, fisheries, farmers' ability to schedule irrigation/rice cultivation seasons and so forth.

Flood protection dams (especially when improperly maintained and operated) and embankments can pose prolonged flood risks, exemplified by the post-Farakka floods in West Bengal and Bihar. In other countries, including the US, the idea of dam building is becoming less popular. For example, in the US, the East Bay Municipal Utility District have recently (December 2011) decided not to go ahead with raising a dam on the Mokelumne River to secure water during droughts.

People, governments, non-profits, educational institutions and policy-makers may redirect technological innovations to improve society and environment. Science literacy can also help with critical thinking, debates/persuasion and meaningful discussion, or interdisciplinary dialogue (such as between natural sciences and social science including economics/political science). Bolstering pre-K-12 science education with inspirational stories about the history and philosophy of science, along with adult education, in the 21st century, can protect people, lakes/rivers and ecosystem.

True science education can avert the undesirable consequences of extreme weather/climate -- coupled with outmoded practice of building of mega dams that are widely known to cause low flow problems, sediment build-up, harm to fisheries and water quality degradation. Science should be the mirror of reality.

Sharing and caring of natural resources for the benefit of all (regardless of political border) would be highly praiseworthy. The paucity of eco-friendly government decisions arises from inadequate science literacy, as opposed to a political impasse.

The writer is a member of the Bangladesh Environment Network (BEN).

Will the Euro collapse?

MAHMOOD HASAN

THE old continent -- Europe -- is in serious financial trouble. The common currency, Euro, is threatened with collapse.

As part of the economic and monetary union in Europe the setting up of Euro was decided under the Maastricht Treaty in 1992. It came into actual operation in 1999 with 11 European members, and now has 17 members.

The European Central Bank (ECB) issues the Euro currency notes and coins and administers the monetary policy of the Eurozone countries. Individual member countries, however, have control over their respective fiscal policies. Fiscal policy of a member country has to conform to the "Broad Economic Policy Guidelines" (BEPG), which are not binding.

The Eurozone was doing fine until 2009, when some member countries -- because of over-borrowing -- suddenly realised they were unable to reschedule their debts or repay their creditors. Massive public borrowings by Greece, Ireland and Portugal to finance their annual budgets had created a desperate fiscal situation.

Subsequently, the public debts of Spain and Italy added to the woes of Euro.

The credibility, strength and permanence of the Euro, which is the second strongest currency in the financial world after the US dollar, came to be seriously questioned.

By 2010 the "European sovereign debt crisis" was full blown, with European leaders scurrying to meet repeatedly to rescue the Euro.

There is a simple macro-economic explanation of how this happened.

Because of globalisation of finance and easy credit many Eurozone members resorted to massive public borrowing, expanding their economies during the first decade of the 21st century. It was considered stupid, at that time, not to use that easy money to expand.

The money (Euro) came from private fund managers, private banks and central banks from within Europe and outside.

Governments invested in infrastructures and industries. As income levels and standards of living rose people went into conspicuous consumption -- such as housing, vacations, expensive cars etc. At that time, the governments' borrowing policies confirmed that joining the Eurozone was a good step in the right direction. The welfare state concept pushed governments to raise salaries and expand social security

benefits to citizens.

The countries posted 2-4% GDP growth, which was higher than the interest rate they would have to pay to the creditors. In short, the non-binding BEPG were thrown to the winds and governments went on spending spree. Everyone was happy as more money was poured in -- little realising that the celebratory period was drawing to an end.

The economic expansion had raised the costs of living and consequently raised the costs of production, making these economies uncompetitive in the world market. Exports began to dwindle and earnings from exports declined. Recession slowly set in with factories and industries closing. Unemployment began to rise. As the economies shrank, GDP growth rate became negative.

While government revenues declined as a result of rampant tax evasion and declining export earnings, public expenditure could not be restrained. Governments were spending more than they were earning. The result was predictable -- huge annual bud-

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get deficits, in some case over 10%. EU rules require that Eurozone countries do not have more than 3% annual deficit.

To cover these gaps (between revenue and expenditure) governments went on borrowing (by selling bonds) at increasingly higher rates of interest -- until the situation got so bad that governments faced "default" (unable to pay the creditor) situation on their debts.

During the past three months, EU leaders met repeatedly to fend off any doubt about the stability of the Euro. But banks and corporate houses are extremely wary and have pulled out their funds from the Eurozone, thereby instilling a sense of panic in the European money market.

After several high-level summits and meetings EU leaders decided on a rescue package of over €1 trillion to help the cash-strapped economies. The fund will be administered by the ECB through European Financial Stability Facility (EFSF). But investors continue to off-load sovereign Euro Bonds issued by the erring governments.

They no longer trust these governments' ability to honour their bonds.

On December 8, EU leaders gathered in Brussels to hammer out a deal to save the Euro. The deal, widely caricatured as "Merkozy Deal" (Merkel of Germany and Sarkozy of France), calls for strict fiscal discipline on the part of every EU member. Britain, which never joined the Eurozone, stayed out of the Deal.

Britain is also a badly indebted country. By not joining the Eurozone, it has retained the flexibility to raise or lower the value of the pound sterling and interest rates to ease out of the recession. Britain still can borrow funds at lower rates than most Eurozone countries.

On the other hand, the Eurozone countries cannot devalue the Euro unilaterally. This is where Greece, Portugal and others have got stuck. In recessionary situations countries can alter their monetary policy by devaluing their money, making their export price cheaper. The process helps increase exports and reduces unemployment as industries reopen. But in the Eurozone that is not possible.

Last October, when the Greek bailout was being arranged under some very harsh conditions, Greek Prime Minister George Papandreou threatened to quit the Eurozone. Greece later gave up the idea because leaving the Eurozone would not unburden it from its enormous debt of €365 billion.

In a recessionary situation when industrial production is sluggish, governments need to invest to boost demand by generating employment (Keynesian theory). But under the Merkozy Deal that may not be possible because governments have been strapped to reduce public expenditure and raise tax -- both difficult propositions.

Theoretically, if EU countries could get out of recession and can grow at a healthy rate of 3-4% per annum then this crisis will blow over and the Euro would gain permanence.

The Euro is under grave threat of collapse. The scenario that is likely to unfold is that the peripheral countries -- Greece, Portugal, Ireland and others -- may decide to quit the Eurozone.

The need of the hour is to restore confidence among investors that the Euro is still strong and credible. Collapse of the Euro will unleash a series of upheavals in the world financial structure as we know it.

There is an old saying -- greed is a vice and one should not live beyond ones means. The Europeans are paying for their greed.

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Increase of electricity rate: impact on rural Bangladesh

M.A. GOFRAN

THE Energy Regulatory Commission, in a press conference on December 22, declared an increase in the rate of electricity in two phases. The previous rate was Tk.4.16/kwh, which became Tk.4.71 from December 1, and will be Tk.5.02 from February 1, 2012 -- i.e. 21.28% higher than the price of last month. The price of electricity had been increased on February 8 this year.

The matter has become an issue of discussion and debate. Supporting the decision, the government argues that the production cost of electricity is high. Considering the economic condition of the common people, the government is selling electricity at a highly subsidised rate. For this, the government had to give subsidy of more than Tk.4,500 crore in the energy sector in 2010. The price of electricity had to be increased to reduce subsidy around Tk. 1,000 crore annually and reduce dependency on bank loan. The government also said that the increased rate was the lowest in the world. The opposition party criticised the decision.

Some experts say that this decision will have positive impact on inflation. Some others say that the decision could be taken during the budget declaration. Consumers' Association of Bangladesh says that, as a result of increase in the price of electricity, production cost of industrial goods will increase. So, people will have to pay more for electricity and, at the same time, buy industrial goods at higher rate. Ex-governor of Bangladesh Bank, Dr. Saleh Uddin Ahmed, hailed the decision and opined that it would have positive impact on national economy and give more scope to the private sector for taking bank loan.

According to the central bank, between November 29 and December 18, the government repaid bank loan amounting to Tk.4,008 crore and thus reduced the loan amount to Tk.15,878 crore. The writer is Consultant, Grameen Shakti.

crore.

About 51% people of rural Bangladesh live in off-grid areas, where electricity is a dream. In some places, private generators are supplying electricity at Tk.45 to Tk. 50 per kwh. They are not using national grid power, but sharing subsidies and bank loans without any protest. It is interesting to see that these people do not have any comment on the government decision. They are neither supporting increase of power price, nor protesting it. But the decision is affecting them in many ways.

In 2000, the government declared it would supply electricity for all by 2020. Eleven years have passed; still there is no road map for achieving the goal. The government is establishing more powerhouses, discovering more gas fields, signing agreement for nuclear power plant, and negotiating power purchase from neighbouring countries to meet the power need.

The question is, are these enough to fulfil the commitment of the government? Are these enough to reach the remote areas? Houses in the rural areas are scattered, where centralised system of power supply is not cost effective and in most cases impossible. To reach them, alternative means and ways have to be explored. The time is short. The year 2021 is not too far. Let us be united in ensuring energy security for all and launch a decade of reforms in the energy sector, which dictates development. It is the ruling party that should extend its hands first.

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