

Global water supplies in peril: Proper management is the only answer

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Despite having made more than \$ 3 trillion in development expenditure over the past five decades startling reminders that nearly a billion people in 50 countries live with severe water shortages every day of their lives came from the U.N. sponsored World Water Commission last year. Germany's Klaus Toepfer, head of the U.N. Environment Programme published a statistics in the recent past that said women and children spend more than 10 million person-years in the aggregate each year fetching water from distant and frequently polluted source.

The World Bank calculates that 3.3 billion people in the 127 countries of the developing world suffer from water-related diseases, among them diarrhea, schistosomiasis, dengue fever, infection by intestinal worms, malaria, river blindness and trachoma. And the deaths from water related diseases almost run to 6 million each year. Without a shade of doubt, water, not oil, is the most precious fluid in our lives, the substance from which all life on earth has sprung and continues to depend on. To be more precise, if we run short of oil and other fossil fuels we can use other alternative sources but if we have no clean, drinkable water, we are doomed. Shockingly, on a planet that is 71 per cent water, less than 3 per cent of it is fresh. Most of that is in the form of ice or snow in Greenland or Antarctica or in deep groundwater aquifer. And less than 1 per cent of that water -- to be more precise 0.01 per cent of all earth's water -- is considered available for human needs. But even then much of it is far from large populations. At the dawn of the 21st century, more than one billion people do not have access to safe drinking water and some 2.4 billion -- 40 per cent of the world population -- lack adequate sanitation.

Alarm bell has been sounded from various international organisations like UNDP, FAO, UNESCO, WHO, UNIDO, World Bank etc. about the availability of fresh water resources. Report circulated by these organisations indicate that the world's supply of clean fresh water already threatened by growing levels of pollution, is going to be so

scarce in some areas that if current trends continue, two thirds of humanity will suffer moderate to severe water stress within 30 years. The report warns that the situation not only imperils human health and development on a large scale, but also the aquatic and terrestrial ecosystems on which much of the Earth's life depends. There is clear and convincing evidence, the report says, that the world faces a worsening series of local and regional water quantity and quality problems, largely as a result of poor water allocation, wasteful use of water resource and lack of adequate management resources.

- λ The statistics compiled by the United Nations University in Tokyo about the gathering global water crisis says:
- λ Every 8 seconds a child dies from water-related diseases.
- λ More than 50 per cent of people from developing countries suffer from one or more water-related diseases.
- λ 80 per cent of diseases in the developing world are caused by contaminated water.
- λ 50 per cent of people on earth lack adequate sanitation.
- λ 20 per cent of freshwater fish species have been pushed to the edge of extinction from contaminated water.
- λ Unfortunately such statistics don't seem persuasive enough for leaders here or in other parts of the world to act expeditiously or meaningfully on water management issues.

"The glaring lack of attention to water issues seems puzzling and may be termed as the most critical failure of the 20th century and the major challenge for the 21st", contends Peter Gleick, director of the California-based Pacific Institute for Studies in Development and one of the world's leading experts on freshwater resources. Gleick further says, there are many tools for doing so, and the economic costs are not high compared to the costs of failing to meet those needs. There is hardly any second thought about the fact that we are now facing a world water gap and because of our apathy it is getting worse with each passing day. The consequences of failing to bridge the gap will be higher food prices and expensive food imports for water-scarce countries that are

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PHOTO: STAR

The Padma in peril

predominantly poor. Hunger and thirst, experts say, are linked to political instability and low rates of economic growth.

Moreover, as much as the world becomes urbanised, its water crisis will deepen. Large cities already bursting at the seams -- Dhaka, Cairo, Lagos and Mexico -- rely largely on ground water but aquifers take decades to recharge while the population growth in such cities is exponential. And as urban demands for water increase, supply of the developing world's already water-starved areas will be further affected creating an insurmountable food-security crisis. Experts agree that the crisis is partly due to natural cycles of extreme weather and the expansion and contraction of arid regions. But human activity is playing an ever greater role in creating

water scarcity and "water stress" -- defined as the indication that there is not enough good quality water to meet human needs. Of all such human activities, dam building has been cited as the most ill-thought-out project. Other than cost factors that exceeded estimates by an average of 50 per cent, ecosystems were destroyed or permanently damaged. Moreover hydro-electric dams once held as clean, renewable energy sources, turned out to be significant generators of green house gases given off by decomposing vegetation in tropical reservoirs. More often than not, projects failed to deliver the benefits that proponents promised. For instance, some dams designed to reduce flooding actually worsened it. In hot dry areas, salt build-up in reservoirs has led to saline waters that ruined farmland. To be sure, dams for all their material blessings are responsible for some of the worst environmental tragedies in history.

In central Asia, the Aral Sea has shrunk to less than half its former size since the 1960s. The two big rivers that used to replenish the Amu Darya and Syr Darya, are now ceaselessly diverted to irrigate million of hectares of cotton fields in Uzbekistan. In consequence this hydrologic theft has destroyed one of the world's richest inland fisheries. Moreover, dust storms poisoned by heavy metals and pesticides that washed into the disappearing lake, have combined with diseases that flourish in withered, polluted rivers to create a public health catastrophe.

Another catastrophic example of damming rivers that caused severe shortage of fresh water supply in the adjacent areas is worth noting here. The lower Mississippi is the greatest freshwater coastal marshland in North America, a resplendently prolific nursery for fish, shellfish and reptiles and a wintering haven for a third of North America's waterfowl. The salt water invasion has cost the economy rooted in fishing and trapping and hunting dearly. In Bangladesh we have abundant water resources with the big rivers still flowing in full fury in monsoon but indiscriminate use of fertilisers and pesticides as well as unplanned erection of dams especially in South Western part of Bangladesh, water areas got polluted and water became unfit for human consumption. In ways direct and indirect playing God with water has had a tendency to bite us back.

Research findings indicate that river water is much more mineralized than rainfall, and long desert rivers like the Tigris and Colorado are especially salty. Irrigating a hectare of crop land for one year can leave several tons of salts dispersed in the soil. Mentionably, in her book "Pillar of Sand", Sandra Postel, a senior fellow with Worldwatch Institute, cites astonishing figures concerning salt-burdened land: 7 million acres damaged in India, 6 million in China and 4 million in Pakistan.

In an effort to look for the alternative in an over-crowded planet, experts have opined water conservation as the only hope. It is now known to all, that every person in the industrialized world wastes plenty of water. Reports have it that even on the usually rain-drenched East Coast of the U.S., reservoirs get alarmingly low from time to time. People can help by using low-flow toilets, taking shorter showers with water saving nozzles, washing cars less often and soaking their lawns and kitchen gardens not more than what is needed. But much more water is squandered by agriculture and that's where the largest saving

will have to come from.

Fortunately, progress is possible provided we have the will. Israel pioneered drip-irrigation systems, which deliver water to individual plants instead of spraying it in plumes over fields. Postel also

points out that small scale water development can save water and will pose fewer and less vexing problems than mega projects. Mentionably, Three Gorges in China costing about \$ 25 billion designed to generate electricity on a grand

scale other than controlling flooding and Sardar Sarovar dam on Narmada river in Gujrat, India pose problems of excessive sedimentation built-up at the dam base. Slowed from a free running river without any pollution to a near static lake, the Yangzi above the Three Gorges could also become the world's largest septic tank.

On a global basis, population wise and area wise in respect of water resource, Bangladesh is not in a very uncomfortable position. Canada has 7 per cent of world's water, China 7 per cent, Indonesia 6 per cent, Bangladesh 6 per cent, U.S. 6 per cent, India 5 per cent, Russia 11 per cent, Brazil 17 per cent and others 35 per cent. But unplanned construction of dams, sluice gates, roads and other obstructions restricts the free flow of river causing silt built-up even in the big rivers Padma and Jamuna. In Canada which has about the same amount of water as China but less than 25 per cent of its population, the resource has been labeled "blue gold". In parched Botswana dominated by Kalahari desert, water is so precious that the national currency is called "Pula" -- rain in the native language.

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rivers in 2000 and sometimes naturally, as in arsenic poisoning of ground water in India and Bangladesh in recent years. It is now learnt that at least 40 million people -- more than 30 percent of the nation's population -- live in the arsenic tainted area.

As a solution to the water problem that is getting out of hand with each passing day, "we must rethink water management", says Gleick. We no longer live in an era or a world, in which rivers can be endlessly dammed, aquifers relentlessly pumped, ecosystems degraded and impoverished. We have to focus on how we use water. That's where new water will be "found". At the same time proposals that are coming to the fore include reducing waste in irrigation, (providing more drip to the drop), desalinating (where energy sources and funds permit), recycling, making appropriate local choices of crops and grain-fed animals, (growing corns rather than wheat where water is scarce), employing low cost chlorination and solar disinfectant techniques, increasing water "harvesting" from sources like rain and fog -- for agricultural use and transportation of potable water in giant polyurethane bags to dry areas. It is as such crucial that there be an international consensus on the potential severity of the crisis that many Asian nations and Sub-Saharan Africa are facing. The evidence that has surfaced so far indicates that governments must give water resources a high priority in their national planning.

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