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The looming water crisis

The world is heading towards a serious crisis with the fast depletion the Earth's freshwater as a result of river systems and aquifers of the globe drying up on account of unsustainable extraction rates. Increasing population pressure, abusive land use practices such as deforestation, increasing demands of water-intensive agriculture and industries are causing fresh water to get depleted and contaminated at rates greater than nature can replenish. Global consumption of water is doubling every 20 years, and according to UN 1.2 billion people are without access to safe drinking water. If the current trend continues, the demand for fresh water is estimated to rise by 56 per cent by 2025 and 5 billion people will be living in areas where there will be inadequate water to meet basic water needs of sanitation, cooking and drinking.

Although 70 per cent of the Earth is covered with water, around 97.5 per cent of it is salt water and only 2.5 per cent fresh water. Of this freshwater, about 70 per cent is frozen in the Arctic and Antarctic circles and most of the remainder is present as soil moisture or lies deep in underground aquifers not accessible to human use. Thus, actually less than 1 per cent of the Earth's fresh water is readily accessible for direct human use, and this is the water found in lakes, rivers, reservoirs and shallow underground sources; only this amount is regularly renewed by rain and snowfall and therefore readily available on a sustainable basis. Fresh water resources, moreover, are very unevenly distributed. Out of the world's 191 nations, 10 share 65 per cent of the world's annual water resources. Many desert and arid areas are already suffering from continuous shortages. In 1998, 31 countries faced chronic fresh water shortages. By 2025, 48 countries are expected to face shortages, for example, Ethiopia, Kenya, Nigeria, Peru and India; nearly 3 billion people in these countries will be affected. The Global Environmental Outlook (GEO 2000) too points out that over the next 25 years, the world would begin to run out of fresh water and "water wars" could spread across a wide belt of North Africa, and West and East Asia.

Growing water scarcity

Fresh water is used in the world mainly for agriculture - 67 per cent - and partly for industry - 19 per cent and domestic purposes - 9 per cent; but developing countries in Asia use 81 per cent of the water for agriculture, 9

per cent for industry and 7 per cent for domestic purposes whereas developed countries of Europe use 45 per cent for industry, 39 per cent for agriculture and 14 per cent for domestic purposes. The developed countries use more water than the developing. The daily per capita consumption in the UK is 149 litres and in Germany 128 litres while people in Ethiopia, Eritrea, Gambia, Somalia, Mali, Mozambique, Tanzania and Uganda have to live on an average of less than 10 litres a day. The UN projects a 50-100 per cent increase in irrigation water by 2025 as a result of growth in world food demand and a doubling of the industrial

ly from unwise use of pesticides and inorganic fertilizer, which consume more water than organic fertilizer. In addition, many developing countries undergoing rapid industrialization, are facing modern toxic pollution problems, viz: eutrophication, heavy metals, acidification and persistent organic pollutants. The pollution threat is particularly serious when it affects ground water supplies, where contamination is slow to dilute and purification measures are costly. The supply of safe drinking water is of vital importance because 80 per cent of all diseases are caused by the use of unsafe water and absence or improper use of sanitation facilities. The goal for fresh

water available to it and future generations. The focus of water management strategy has been hitherto only on the increase in supply of water not paying much attention to demand management. Hence, it is necessary to have an integrated approach to fresh water management to reconcile competing demands with dwindling supplies and a framework in which hard choices can be made and where effective operational actions can be taken. The UN water assessment for the longer term, makes clear that looming water crisis in many regions must be addressed through hard policy decisions that reallocate water to the most economically

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water use if the current growth trends persist.

The excessive extraction of ground water is leading to a fall in the water table in some countries. Since 1965, the shallow water table under Beijing city has fallen nearly 200 feet; in some parts of Beijing deep wells have to reach 1000 metres to tap fresh water! In the US, the fall in the water table, due to continuous pumping has reduced the irrigated area in several states like Colorado, Kansas, Oklahoma and Texas. As the water level declined, numerous plants, which thrived on ground water, have perished, reducing the fodder for animals. In many rural areas, women have to walk miles in the scorching sun to get a litre of drinking water. Some 30 per cent of women in Egypt walk over an hour a day to meet water needs, while in some parts of Sub-Saharan Africa women and children spend eight hours every day collecting water.

Water pollution

The agricultural sector while being the biggest user of water is also the largest polluter in most developed and developing countries. Water pollution takes place main-

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The main areas where action is needed for the sustainability of water resources are:

- (a) Education and involvement of people about the impending crisis of water scarcity;
- (a) More involvement of women in decision-making process related to water;
- (a) Emphasis on rain water harvesting;
- (a) Reasonable water tariff based on quantum to check the overuse/wastage of water;
- (a) Stress on the use of organic manure in agriculture as it consumes less water.

Demand management

Access to clean water for basic needs is a fundamental human right. On average a person needs a minimum of 50 litres of water per day, with 5 litres for drinking, 10 litres for cooking, 15 litres for bathing and 20 litres for sanitation needs. Each generation has a responsibility to ensure that its actions do not diminish the abundance and quality of

and socially beneficial uses. They need to be complemented by water-efficient technologies and pollution control measure. Even with demand management control, new supplies are needed. The World Bank estimates costs of tapping new supplies will be about two or three times those of existing investments as most of the low-cost accessible water reserves have already been exploited.

Pricing of water is resorted to by many countries for demand management and to discourage waste, but high water prices remain highly sensitive issues in poor countries, where most people depend on irrigated agriculture for their living. Even so, socio-economic development in water scarce countries may depend critically on more rational distribution of water supplies. Commodification and pricing of water, according to many, might lead to worsening of the present situation hampering access to safe drinking water for the poor. According to them, when access to drinking water is considered a basic human right, then any kind of price on water would prevent the poor from access to water.

Privatization

Commercialization of water is worrying

many people. Water has steadily transformed into a billion dollar industry where multinational corporations, aided by irresponsible or corrupt governments, are taking control of once publicly owned water supplies for a singular purpose of making profits. Corporations presently provide only 5 per cent to 10 per cent of the world's population with water and this current market is valued at \$1 trillion. The major arguments against privatization of water are as follows:

- 1) The profit motive of TNCs is not consistent with the basic needs of poor and water-stressed people.
- 2) TNCs in alliance with governments have concluded many free trade agreements, which accelerate the destructive extraction of natural resources such as timber, ores, oil, and recently water. These agreements place profit above ecological principles.
- 3) Privatization of water tends to increase cost to consumers.
- 4) Privatization promotes monopolies and corruption. Privatization favours the highest bidder and this tends to raise the price.
- 6) Privatization restricts the flow of information on water quality, especially testing for water-borne parasites and toxic contaminants.
- 7) The track record of TNCs is replete with evidence of environmental abuses and the inequitable distribution of water.
- 8) TNCs lacking ties with the community and solely interested in profit maximization cannot be expected to be trustworthy stewards of water resources.
- 9) The supply and quality of water must remain in public control whereby a more holistic and pluralistic assessment of the needs of humans and their eco-systems may be conducted.
- 10) State intervention is essential in water management for enacting laws to control groundwater overuse, restore the health of degraded aquatic ecosystems and preserve the unaffected ones, regulating tariffs to ensure they are reasonable, educate the people on the looming water crisis, to increase water supplies by clearing rivers, lakes and canals to increase their water holding capacity, to encourage rain water harvesting, to control and penalize pollution, to control the use of inorganic fertilizer and agro-chemicals. These functions cannot be performed by private firms.

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Private-Public Partnership (PPP)

An alternative governance structure suggested to replace privatization of water supply is private-public partnership (PPP) with multi-stakeholders where governments can use the technology, funds and management skills of the private sector. PPPs have failed in Africa and even in India; in the latter community control through "Pani Panchayat" has resulted in water control passing into the hands of powerful landlords and contractors. There are, however, success stories as in the Philippines where the government retains the asset ownership but leaves operational and capital expenditure responsibility to the private sector. Civil society, however, is not impressed as the past record of TNCs show that they have often overridden other stakeholders with their own agenda of reaping higher profits.

The Johannesburg Plan of

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Implementation of the halving the proportion of people worldwide with no access to clean water and basic sanitation by 2025 contains the following key commitments:

I. Launch programme of actions to achieve safe drinking water and sanitation goals;

II. Mobilize international and domestic financial resources, transfer technology, promote best practices and support capacity linking;

III. Promote and provide new and additional financial resources and innovative technologies to implement Chapter 18 of Agenda 21 which deals in "Protection of the quality and supply of fresh water resources application of integrated approaches to the development, management and uses of water resources";

IV. Develop integrated water resource management and water efficiency plans by 2005; and Commitments by US of \$ 970 million, EU \$1.40 billion a year under its "Water for life initiative", ADB \$ 5 million grant and \$ 500 million credit and others \$ 20 million.