

Let Water be on Tap:  
If not on Top

# World Day for Water '97

Use Safe Water for  
all Domestic Needs

The World's Water : Is There Enough?

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## Drinking Water Problem in Bangladesh

Dr. Jamal Anwar

**W**ATER is the basic requirement of life. Characteristics of water bodies receiving industrial, agricultural and domestic discharges significantly result in the deterioration of quality of water (e.g. lack of dissolved oxygen and concentration of toxic substances) and thus may threaten the health condition.

WHO statistics show that about 80 per cent of all illnesses are water-related. Besides, untreated industrial effluent and unchecked agro-chemical discharge through run-off significantly affect in places both surface and groundwater.

The analytical capability in Bangladesh are limited to some physical, biological and qualitative chemical characteristics (BOD, COD, DO, PH, turbidity, temp.), whereas the most harmful pollutants are not determined, controlled or monitored in. The absence of adequate legal framework for pollution control and preservation of environments as well as lack of public awareness about the issues involved have allowed the setting up of industries without any built-in control or safeguards against pollution of the environment in Bangladesh (ESCAP). Environmental policies in government plan and priorities are conspicuous by their absence and where they exist they are inadequate, outdated or unenforceable (CIDA).

The major industries in Dhaka, Chittagong, Khulna, Narayanganj, Fenchuganj, Chattak which use jute, paper and pulp, textile, fertilizer, plastic, leather, chemicals, food and beverage, sugar, tobacco, distillery etc. directly drain their untreated effluent to the rivers. Some 170 tanneries at Hazaribag directly drain their effluent to the river, polluting a major source of supply water for Dhaka city dwellers.

Almost all industrial units in Bangladesh are operating without proper device (mechanical, chemical and biological methods) for treating their waste effluent. Agricultural runoff which contains fertilizers, pesticides and salts

from farmland are increasing with Grow More Food programme. Sewage poses a threat not only to human health but also increases the load of nutrients in water which use up oxygen as they decompose.

With the increasing growth of population the amount of uncontrolled sewage has become a treat to aquatic life. Coliform level in Bangladesh based on a very few investigations shows that the total bacterial count, total coliform and faecal coliforms are higher than WHO recommended standard. The presence of excessive number of coliforms and other bacteria in surface and possibly in some areas in ground water are responsible for the recent outbreak of diarrhoeal diseases in Bangladesh. Diarrhoeal diseases are mostly the result of water-borne viral and bacterial infection.

Ground water may also have been affected in places by leaching from industrial wastes. Also the emission of industrial effluent causes a deterioration in the quality of the ground water. The anthropogenic emission of sulphur and nitrogen oxides and metals have led to an overall disturbance in the acid-base balance of soils. The increasing concentration of these biologically and chemically reactive acidic substances in precipitation ground water and surface water has direct or indirect consequences on biotic systems.

Soil protects aquatic systems mainly by functioning as a sink in soil. Some metals are dangerous for living organisms in the solution phase and when they are present in ionic form or soluble complex.

Soil with a high clay and humus content can absorb heavy metals, on the other hand, soil erosion (deforestation) causes loss of humus and smaller capacity to mobilize heavy metals.

A high content of heavy metals is not only disaster for health but also causes erosion of pipes. This may further be contaminated by harmful bacteria and other pollutants. Alto-

gether this creates an excessive burden on the aquatic environment with substances giving casus for cancer in respect of their toxicity, durability, enrichment capability or carcinogenic, mutagenic effect. Contamination of marine species and aquatic environment in the coastal zone of Bangladesh by organic halogen compounds, pesticides such as DDT, Heptachlor and Lindane are reportedly high.

The high percentage of DDT and its metabolites DDE and DDD indicates that after forbid are still produced and used in Bangladesh resulting in health problems to present and future generation. Many of the pesticides are sold by trade names without mentioning the group or class to which they belong. The adverse effect of nitrate pollution from leach and drainage of agricultural land has not yet been investigated.

Besides uncontrolled used industry and automobile oils are dumped into rivers and sea causing a serious harm to nature.

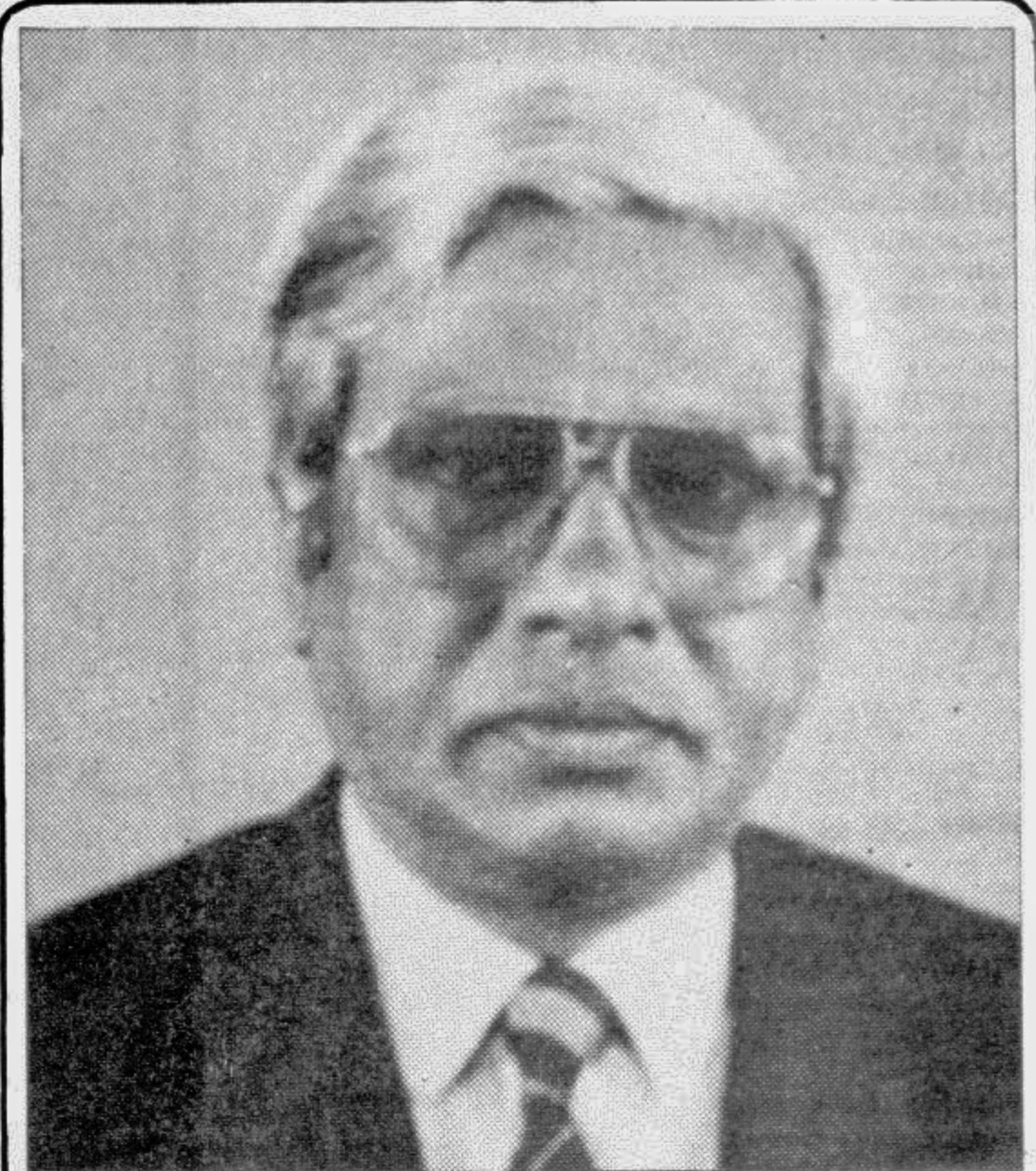
Damage to ground water is a long-term affair and can be remedied by high technical means in exceptional cases. Developed countries are sometimes only partially successful to recover such polluted ground water. This is why an anticipatory protection principle has a very special importance in water conservation. A relatively higher concentration of pesticides and some known carcinogenic substances like phenol 0.002 mg/l, D.D.T. 0.001 mg/l proposed by NEMAP Bangladesh should not be included in drinking water.

In Bangladesh, standard sample collecting methods, quantitative analytical methods (like Environment Protection Agency, U.S.A. or EC norms) and expertise are not yet available. In the absence of that it is not possible to control the quality of water even if we have a strict drinking water act. This is not only a problem of the present health situation but will also effect the well-being of fu-

ture generation (degrade in CNS system).

The following measures should be taken in Bangladesh on urgent basis if improvement of drinking water is to be brought to an acceptable standard (e.g. Environment Protection Agency, U.S.A. EC norms).

- \* Water conservation as a permanent high priority in the environmental policy.
- \* Precautionary restriction on emission levels at the source of pollution.
- \* Restriction in discharging waste water constraining dangerous substances into aquatic environment.
- \* Intensifying waste water treatment (mechanical, chemical and biological)
- \* Introduction of Waste Water Charges Act. Waste Water Charge Act will impose charges on the polluter discharging inadmissible substances into the waste water.
- \* Research projects aimed at discovering origin, paths, whereabouts and effects of anthropogenic substances in the aquatic environment and designed to discover ways of avoiding these critical burdens.
- \* Keeping Bay of Bengal and inland waters free from oil and other pollution.
- \* Regional cooperation, it is impossible to keep the Ganges, the Brahmaputra and the Bay of Bengal waters free from pollution without regional cooperation.
- \* Monitoring the use of chemical fertilizers, other agro-chemicals and at the same time emphasizing on more traditional methods and use of more bio-pesticides and reducing mono-culture.
- \* The general administrative regulation on more detailed definition of substances liable to pollute water and their classification by the degree of dangerousness.
- \* Public awareness and citizens concern to be used as pressure for proper policy planning.



### MESSAGE

I am glad that NGO Forum for Drinking Water Supply and Sanitation has taken the initiative for observing the 'World Day for Water'. The UN declared 'World Day for Water' has been observed every year since the declaration in 1992 and the NGO Forum is playing the leading role as the apex body of WATSAN NGOs in Bangladesh for ensuring safe water supply for the rural people.

The slogan of this year's Day is 'The World's Water: Is There Enough?' This is indeed appropriate for whereas the amount of water in this world remains constant, the demand for it - agricultural, industrial and for safe water for domestic needs - increases with the world's population. And now is the time to assess the world's water resource as well as that of Bangladesh.

The NGO Forum has been engaged for over one decade in trying to ensure safe water supply and hygienic sanitation facilities to the rural people. It has been formulating demand-driven programmes for ensuring safe water to the rural community which is an absolute prerequisite to sound health.

I believe the observance of this Day will have a positive impact in creating awareness among the rural people as well as among the sector professionals and policy makers about safe use and proper management of water resource.

**Dr. Fazole Hasan Abed**  
Executive Director, BRAC  
& Chairperson  
NGO Forum for Drinking  
Water Supply and Sanitation

### MESSAGE

NGO Forum for Drinking Water Supply and Sanitation, like the other years, has been observing the 'World Day for Water' today.

The United Nations declared the International Drinking Water Supply and Sanitation Decade since 1981 to 1990 to facilitate safe water and environmental sanitation to each of the people of the globe. Reviewing the success and failure of the past decade the 2nd Decade has been following since 1991 to 2000. And in the beginning of this decade the United Nations, at the 47th meeting of its General Assembly, declared this Day. In fact this historical declaration by the United Nations is for ensuring safe water supply for all the people on this earth.

To mark the Day the Forum has under taken different type of activities like symposium, rally, discussion forum, etc. country-wide through its 560 partner organizations guided by the Forum's 10 Regional Offices.

Let us promise on this Day to work for ensuring safe water supply facilities and proper use. And it needs an integration of mutual understanding and cooperation among the govt. sector, NGOs and donor agencies to solve the problem related to water resource.

I believe the observance of the Day will make the people aware of using safe water for all purposes and this will encourage the people's participation in proper water management to materializing the theme of this year's slogan 'The World's Water: Is There Enough?'

**S.M.A. Rashid**  
Director  
NGO Forum for Drinking  
Water Supply and Sanitation

## Is There Enough Water in Bangladesh?

Joseph Halder

**W**ATER is a basic requirement for all life, yet water resources are facing more and more demands from and competition among users. In 1992 the United Nations General Assembly designated 22 March of each year as the World Day for Water. The slogan 'The World's Water: Is There Enough?' has been adopted to celebrate the Day this year emphasizing on the theme 'Water Resources Assessment'.

This is the time when the global awareness of the vital role water plays in sustainable national development is increasing. Water i.e. safe water, is vital for sustaining life on earth. On the other hand water is crucial for economic and social development including energy production, agriculture and domestic and industrial water supplies. Therefore, every unit of water should be used efficiently, equitably and soundly. The economic value that water generates should be given due attention, when apportioning scarce water resources between competing uses, without infringing on the rights to basic services for all people.

Much has been said about our shrinking supply of safe water, which is a basic requirement for all life. Of all the water on earth, 97.5% is salt water, and the remaining 2.5% is sweet water. In reality, the supply of safe sweet water in the world has not been decreased, but the pollution and the demand for it has been increased markedly and complicated by irregular rainfall. Water pollution causes the death of some 25 million people every year especially in developing countries. Half of the world's diseases are transmitted by or through unsafe water. It is estimated that 20% of the world's population lacks safe drinking water.

The water issue is related to our existence as the total life cycle on earth is being regulated keeping water in the centre. But it is a matter of great regret that water, which was the most available component on earth is now becoming scarce due to improper management and pol-

lution. Growing tensions over water resources are becoming a source of conflict at the community level up to inter-state politics. Many predict that wars of the next century will be over water, not oil or politics.

Bangladesh has achieved a remarkable success regarding safe water supply through the continuous initiatives and activities taken by the government and various service delivery non-government organizations. But the success, achieved so far, is not enough for improving public health. Because the present statistics reflect that only 26% of the rural population is using tubewell water for all household activities. Our life and total atmosphere even now is being victimized due to use of polluted water which cause various diarrhoeal diseases. A countless people are suffering from diarrhoeal diseases while a major portion of them are children. About 3 lacs of children are facing death every year due to diarrhoea. We have failed to provide any security for children's life. The malnutrition rate of our people has already exceeded that the people of Ethiopia due to our improper use of safe water. We are continuously facing a loss of Tk. 32,000 crores every year due to treatment of diarrhoeal diseases. Our experience discloses the truth that use of safe water for drinking purpose only would not be enough to reduce water-borne diseases. The responsibility leads us for making the people aware of using safe water for all purposes.

A living being must be regulated depending on water and this leads to define water as life. Water is the maximum and mostly used component in human life among all other resources. Apparently there are two sources for usable water: earth surface water and ground water. But it is a matter of great regret that water scarcity is

coming up day by day due to lack of enough rain and flow of the rivers. The ground water table in Bangladesh is declining dreadfully as because the rivers of the country are about to getting dry gradually and consequently the northern and southern parts of Bangladesh are about to turn into a desert. We are about to lose our fish resource; a big portion of the crop field has turned into barren land. This uneven distribution, unavailability and pollution of water is making human life distressful while the environment is deteriorating every day. It reflects that we are gradually marching towards a darkened future of vicious circle. Our ground water table is declining very rapidly due to some man-made disasters. The flow of our rivers are gradually decreasing as a result of that the salinity is gradually making its rapid entry at the upstream region which is altering the soil structure. This might have irreversible negative impact on our agribased economics. The salinity is now swallowing the sweet water areas crossing the saline belt of the country. The salinity is causing the change of water quality of the sweet area, besides, soil fertility is being destroyed, forestry and plants are being devastated. The growth of the Sundarbans is already stopped. Environmental degradation is further aggravated by the devastation of the forestry. On top of that, drought is causing problems of different dimensions on the ground. The story does not end here. During monsoon a large part of the country is inundated with water. This phenomenon could be stated endemic in nature. Greenhouse affect is strongly and surely destabilizing the ecological balance of the country. The sea surface is swelling up due to greenhouse affect and experts anticipate that it might have a profound influence on

the total quantum of our land-mass in the long run. The Dailies are regularly publishing news on their cover pages 'Dreadful Scarcity of Drinking Water' 'Ground Water Table is Declining very Rapidly', 'Women Carrying Water from Deep Distances', 'Deadly Drought in the Southern Part' - 'Villages are turning into Barren Fields', etc. but the truth is that this ground water table is the only safe source for drinking. In this circumstances, it is too difficult to ensure supply of safe drinking water to the rural people. And the problem is not only for drinking water rather irrigation is also being hampered very badly. The ground water is presently used for irrigation due to lack of enough resulting in less crop production surface water. If the surface and ground water table decline continuously it would not be possible to get water for irrigation in near future resulting in less crop production.

About 42% shallow tubewells of the country are about to go out of order due to lack of sufficient water says a recent survey report. Meanwhile, 2,000 deep tubewells and 15,000 shallow tubewells of different parts of 16 districts of the northern part have already gone out of order. On the other hand arsenic invasion in Bangladesh has now become the new headache to the nation. Not all the TWs in Bangladesh are now supplying safe drinking water. Many of them have become reservoirs of liquid poison: Arsenic. 50% shallow tubewells of the Borendra area have already failed to get water. Probably there will be no production in lacs acres of IRR and Boro fields vis-a-vis the dreadful scarcity of drinking water is about to stop the normal life living of the area.

According to the specialists it is possible to get water if the

water layer stands between earth surface to 21 feet underground. It is feared that the water table may go beyond 21 feet during the dry season. It is notable that 48,000 million cubic liters of ground water is useable in our country but we are being able to get only 28,000 million cubic liters. The water resources are not getting a normal shape due to lack of water flow in the rivers, annual raining and un-planned irrigation and consequently the water layer is declining gradually. This scenario pushes us all to treat the water sector with emphasis considering the realities of Bangladesh as an over populated country, and this is the basic demand for our betterment to ensure enough and appropriate supply of safe water and to use water resource considering from environment conservation perspective.

NGO Forum for Drinking Water Supply and Sanitation has been working as the apex networking body of about 560 local, national and international partner NGOs and CBOs. And since its starting in 1982 the Forum has been facilitating the demand driven WATSAN programme with a view to materializing the target of using safe water for all domestic needs and proper management of water resources. This is to be mentioned here that it has been achieved a remarkable success in the field of water though a lot of limitations are there. A total of 92% rural people presently are covered with safe water facilities while it was only 40% at the beginning of 1980s. About 800,000 No. 6 tubewells have been installed by the Department of Public Health Engineering (DPHE) in this period while the NGOs of Bangladesh, under the banner of NGO Forum and others, installed almost the same numbers of tubewells, which obviously is a major

achievement.

The Water Development Board had made an observation on 1,250 tubewells all over the country according to the last 4 years statistics which reflects that the ground water table has been declined 1 foot to 4 feet on an average within one year. The water table declining rate this year increased 12 feet in Rajshahi, 5 feet in Khulna, 5 feet in Dhaka and 4 feet in Comilla than the last year. The hydrologists are anticipating that the water table of 2% of the country including Dhaka and the Borendra Region will decline about 46 feet to 80 feet. Meanwhile, the water table of the Borendra region including Jhilmil and Nijampur of Chapai Nawabganj, Godagari of Rajshahi, maximum portion of Mohonpur and Tanore have already declined beyond 60 feet to 65 feet and presently the No. 6 tubewells and deep tubewells have gone out of order completely. Consequently the low water table is increasing and the shallow water table is decreasing rapidly due to declining of water.

It is being feared that if the present declining rate continues, more than 50% No. 6 tubewells would be inoperative by the year 2000. We will have to install Tara Pump changing the present technology to face the future reality. But it is so costly for us as a developing country to install Tara Pump. More the mechanism including the care-taking and training for the operation of Tara Pump should be considered. And it requires supports from the donor and different development agencies along with the govt. initiative for initiating Tara Pump installation and other mechanism for the deep set area.

Considering the prevailing reality research and development activities should be taken by the govt. Initiative should be

taken for installing deep tubewells, stone covered shallow tubewells, and development of pond-sand filter and catchment of rain water. A programme should be taken specially to develop the 'Tara Pump' in the deep water table areas following research and development activities. Moreover, programme to examine the possibility of inventing a Super Tara Pump, alternative mechanism for the hilly areas i.e. mechanical drilling, development of fountains, infiltration gallery and catchment of rain water should be considered to launch effectively.

The World Summit for Social Development held in Copenhagen made a 10-point declaration where it has been stated very clearly and directly to create equal provision for the women making gender equality regarding their right in every step. The matters demand more importance in the context of our country. The half of our population are women while it is not possible to set any absolute development keeping women aside. Women and water are very much integrated and for this the women should specially be encouraged regarding proper management and use of water resource. This is a historical truth that the women are engaged in water collection along with child care and water-related other household activities. But if the present declining rate of ground water table i.e. scarcity of water is continued the women will be the vital victim of the future reality.

The water-related activities are executed mostly by the women in our household atmosphere which justify the selec-

tion of our women to water resource management. Our women should be integrated with every of the development initiative with regard to enough safe water. Our children under five are being attacked about 7 crores 90 lacs times per year by the diarrhoeal diseases, among them about 3 lacs die. The rest are living accompanied by various other illness and endless malnutrition. Needless to mention that lack of sufficient safe water facilities are behind this unexpected statistics. Our mothers can save these lives by acting effectively in the field of safe water supply as because they mainly are engaged in the household activities. The women who presently are engaged in different NGOs, leaders of different women organizations along with the activists from all stages of the society should play an important role in this regard.

We believe that people are the key actor of any development initiative. So people of every sector should be integrated with safe water development process, and every family should be motivated. And it needs the integration of societal power and combined effort. It is not possible to solve water problem by only organizing seminar, meeting and publishing article in the magazine. Rather it requires to raise awareness among the community people as well as to sensitize the all other sectoral and trans-sectoral policy makers in the govt. or in NGOs about the positive result of safe water development as because we shall not put up for long with a situation 'Water, water, everywhere; not a drop to drink'.

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