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Every drop counts

Zafar Futehally

After air, water is the most precious natural resource that we have, and yet we have treated it so callously as a free resource that we are worried about a calamitous shortage in the very near future. There has been a spate of articles on the subject expressing alarm at what is likely to happen. We have assumed snugly that if we run out of water in the plains, we have an ultimate supply in the mountains from which it can be brought down by gravity. But this may no longer be true. Murad Ali Baig writing in The Times said "on April 16th, while returning from a trip in the mountains I was appalled to see that the level of water in the Ganges at Garmukteshwar was the lowest I have seen during the past twenty years". The problem is not confined to the tropics. From London Sean Poulter reported on 17th May that 'millions of families could be hit by water shortages this summer, with rationing and standpipes in the streets. The warning came from the Government's Environment Agency which called for URGENT and **DRASTIC** measures to conserve supplies.

The BET has been playing its part by advocating the importance of rain water harvesting and other

measures and drawing attention to our wasteful domestic use of water by allowing the taps to run freely during our morning ablutions—flushing the toilets needlessly while people 50 KM away have no water to drink. This is a practice which should be avoided. The example of Murad Ali Baig is worth pondering over, and adopting it to the extent we can, "we found that a 5 minute shave under an open tap needed about 15 litres of water, and that a 10 minute shower took about 40. So last summer we closed all the taps in our 4 bathrooms though we provided our guests with as much water as they needed, but in buckets to be used in mugs. We already had two stage flush tanks, but we asked our guests to use them sparingly. The result was astonishing. Our 1000 litre overhead tank that earlier needed to be filled everyday from our rain harvest water tank now lasted 4 to 5 days". What is the situation in Bangalore? We asked A V Shankara Rao, Retd. Chief Engineer of the water Resources Development Organisation to let us have the facts, and this is what he wrote:

Water for Bangalore city

Mr. Atignal V. Shankara Rao

*Chief Engineer (Retd), Water Resources Development Organization,
Government of Karnataka, Chairman, Technical Committee, Cauvery Water Disputes.*

Water is a resource which is renewable and indestructible. Our planet earth is sustained by the hydrologic cycle. Our Earth has virtually the same amount of water today as it had when life began. 97% of water on earth is brackish. Only 3% is fresh water and 77% of this 3% is ice. Thus, fresh water available in rivers, lakes and other water bodies as also water available underground is only 0.69%. This is the global picture of fresh water availability. Water available in different regions of the world is unevenly distributed and this is a serious limitation and a problem. This problem is aggravated by the ever-increasing demand of the growing population and also by its wasteful use.

In India, while the per capita availability of river flows in the Himalayan River Systems (Sindhu, Ganga, Brahmaputra etc.) is estimated to be 2833 cum, it is 600 cum in the Cauvery basin which is the only source for Bangalore water supply. Bangalore City is situated on a ridge partly draining into the Cauvery basin and partly into South Pennar basin. 66% of the streamflows of the entire Cauvery basin up to Karnataka-Tamil Nadu border is generated in Karnataka, while the rest flows in from Kerala. In terms of average flows it is 483 Thousand Million Cubic Feet (tmc) out of a total available flows of 740 tmc in the entire Cauvery basin upto its outfall into the Bay of Bengal in Tamilnadu.

Bangalore Water Supply and Sewerage Board (BWSSB) established in 1964 by Government of Karnataka is entrusted with the duty of providing water supply to the Bangalore Metropolitan Area and also for providing sewerage and its disposal. In collaboration with the BWSSB, The Australia-India Development Corporation has prepared a Master plan for Bangalore Water Supply, which has identified five sources of water for Bangalore city. First and foremost, the main Cauvery river itself is the source. Water is directly drawn from Shivasamudram Anicut, 99 Km from the city centre. This source has

a potential of a total of treated quality water of 2011 MLD to be executed in five stages (MLD means million litres per day). The second source is from the two reservoirs viz., Hesaraghatta commissioned in 1896 and T.G. Halli (1933) both on Arkavathi River a tributary of Cauvery, the total potential adding up to 104 MLD of treated water. The third source is groundwater within city limits which yields 190 MLD of potable water. The fourth source is rainwater harvesting within city limits for non-potable commercial and household use of 20-50 MLD. The fifth source is re-use of treated effluent within the city limits i.e. 170-220 MLD of non-potable water supply for industrial and non-domestic use. From these five sources, the total available potential yield comes to 2730 MLD.

Water is now scarce due not only to its high cost of transmission to Bangalore over a distance of 84 KM against a pumping head of 1500 feet but also because of the competition for Cauvery water from other users in rural and urban areas of Karnataka, Tamil Nadu, Kerala and Karaikal area in Union Territory of Pondicherry. If current trends continue, water supply will be insufficient for all the four States even in normal years. These issues have been debated before the Cauvery Water Disputes Tribunal and its decision is awaited. Karnataka has claimed an annual allocation of 30 thousand million cubic feet (2001MLD) of water for Bangalore City.

Groundwater usage is at present not sustainable and in the long run will have to be reduced at a sustainable rate. To avoid the risk of excessive depletion, management initiative and legislation is essential. It is also important to see that groundwater is protected from pollution.

There are no doubt alternative sources. A remote source, Hemavathy and Nethravathy have the potential to be shared by rural and urban areas. The

Nethravathy source is worth-considering but has the disadvantage of remoteness and possibility of water theft. Eventually, there is a clear and urgent need for a storage exclusively for Bangalore water supply from Cauvery stream flows. Dependence on the existing four irrigation reservoirs cannot be taken for granted for an indefinite period of time.

Recently, Mekedatu Reservoir Project has been confirmed as a Central Project for power generation to be constructed and operated by the National Hydro Power Corporation (NHPC). The storage required for Bangalore water supply will have to be earmarked and accommodated within the larger storage at Mekedatu. But this cannot be decided unilaterally, therefore, tapping the Netravathy source may become inevitable.

The population of the city was 45 lakhs in 1991, 70 lakhs in 2001 and 2006 it may reach 89.24 lakhs and according to demographic projection, it can be 105 lakhs in 2010. The projected average annual growth rate is 5.5%.

The standard prescribed for per capita supply is 200 lpcd (liters per capita per day). In 2001, the actual

supply position was 80 lpcd and in the following years a downward trend. However, with the completion of the fourth stage of Cauvery water supply scheme the supply position is expected to improve but reaching the prescribed standard is a far cry. To be practical, 140 lpcd has been recommended.

Water Resources Planning and Water Allocation in Cauvery River has been based on average values and there will be periods in future when the stream flow will be significantly less than the average. In 1 in 20 year period, dry natural flow in the Cauvery River System is approximately 60% of the average. More significantly, according to the analysis contained in the master plan, 1 in 20 year residual flow under current conditions after upstream abstractions is only 12% of the average. Such large flow deficiencies could cause economic and health impacts on urban communities. A Drought Management plan should be an integral part of the BWSSB's Emergency Management Strategy.

In years of deficiency, encroaching on irrigation storages is apt to gain ground and such a tendency is fraught with the danger of conflict between irrigation interests and that of Bangalore Water supply.

Everytime I wash my hands in the basin I am acutely conscious of the amount of water I am wasting. It is not easy to turn the tap on and off every few seconds while both your hands are occupied with soap, so the water continues to flow even while you are not using it. And also the streamlined design of the modern tap requires a firm grip of the entire hand in order to manipulate it. The old style tap was easier to control some institutions have managed to install taps which can be controlled by the foot (just like a car accelerator) while the hands are occupied This must save an enormous amount of water. Why can't this arrangement be mandatory for all washing areas - private and public.

This pedestal base sink features:

- Splash-mounted gooseneck faucet
- Pedal valves to operate faucet
- Soap dispenser
- Basket drain
- Pedestal base
- Keyhole wall bracket
- Bowl size:10" x 14" x 5"
- Overall size: 17-1/4" x 21-1/4"
- 20 gauge



A critical situation had cropped up in respect of Mysore water supply in a recent year. The National Water Policy (2002) has no doubt prescribed priorities in which top-most priority is given to drinking water supply. But the actual application of this principle in times of deficiency has to be cautiously handled.

Water deficiencies do occur in mega cities. Look at Chennai, look at Delhi. Droughts cannot be prevented. Droughts have to be managed.

TRUE VALUE OF A TREE

A tree that lives for 50 years generates Rs. 5.3lakhs worth of oxygen, recycles Rs. 6.4 lakhs worth of fertility and soil erosion control, creates Rs. 10.5 lakhs worth of air pollution control, and Rs. 5.3 lakhs worth of shelter for birds and animals

Besides it provides flowers, fruits and lumber;

So, when even one tree falls or is felled, the city loses something worth more than Rs. 32 lakhs!

Think before you cut a Tree!

Concerned Citizens!



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