

Water Resources in India

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Introduction

Water together with air, earth, sun and fire is one of the five elements sustaining life. No doubt all are important elements. Water nevertheless plays a crucial role. To emphasize this let me remind ourselves here that till recently it was believed that the planet Mars had no water; it was consequently held that it can sustain, no life. Now, scientists have found that there is water in Mars and with that they believe that there are traces of life on that planet. Human habitations in the world developed alongside great water bodies rivers like the Nile, the Euphrates, the Ganges, the Yangtze have seen great civilizations flourish on their banks.

When we look at this crucial resource, water, at the beginning of the 21st century we realise it is becoming a scarce, if not an endangered resource in many parts of the world. With world population crossing the 7 billion mark, recent statistics show that nearly 1.1 billion people in the world do not have access to clean drinking water. That is nearly the population of India! Only 1% of the water in the world is potable, 97 % being Saline and 2% in the form of glaciers.

Global policy analysts agree that water or more accurately the shortage of it, will decide the course of world events. Experts in Middle East have analysed how water shortage – especially the shrinking Jordan River System – will decide Middle Eastern politics. In the subcontinent, the shortage of water in the Indus River System will have a crucial bearing on Indo–Pakistan dynamics. The Chinese attempts to dam and divert the Brahmaputra have adverse fallout on Indo-China relationship. The sharing of the Teesta waters has become a bone of contention between India and Bangladesh. Closer home, the Mumbai Metropolitan region will become the largest consumer of water among coastal settlements in India. Mumbai, its largest component, which will account for 55% of this demand, gets its water from river valley projects on the mainland; but with increasing environmental concerns putting a break on large river water projects, water desalination will become the preferred source of clean drinking water. In short the solution to water crisis will be in adaptation of modern technology, including recycling waste water by purification.

However, over all the position of availability of water is not alarming in India if one looks at the macro picture. Annual estimated precipitation in India is 4000 BCM. Average annual potential in rivers is 1869 BCM. The Projected water

demand in India by 2025 will be 1093 BCM. Thus, on a macro level there is no demand supply mismatch. However such a mismatch occurs in many states, cities and rural areas. The main question is that of distribution of water from the water sources, natural or artificially created. Water conservation measures for dry areas and flood protection measures for flood prone areas are essential. Added to this will be the adoption of technology to purify sea water and make it potable. These include water desalination, which increasingly supplies large cities with drinking water in coastal areas with inadequate access to clean water.

Water Management

While at a macro level water situation in the country does not cause great concern on a micro level proper water management will be very crucial for equitable distribution of the resource. Proper water management should include emphasis on demand management, conservation and increasing efficiency of water utilisation. A good water policy should include equal attention to these issues covering the use of water in the domestic, industrial and agricultural sectors and river management for each river basin. In the domestic sector, introduction of water saving devices and installation of water meters for all consumers, together with a progressive water tariff structure would be an essential prerequisite to a good water policy. Auditing of water use would be necessary as well.

In the Industrial sector as well, a progressive water tariff followed by water recycling facilities and treating urban sewage water for cooling and other appropriate industrial uses will contribute to optimal water usage. The water tariff structure should encourage recycling in the industrial sector. In the Agricultural sector, which is the largest user of water, setting up of water users' associations will go a long way towards good water management. Water rates should yield enough revenue for maintenance of facilities. Water rates should be so designed that they encourage optimal use of water; it should encourage the use of treated water for non-edible crops and saline water for tolerant crops. In a nutshell, it should reduce water losses in this sector.

Many states have taken measures to introduce appropriate water tariff structures. States like Maharashtra have introduced autonomous commissions to fix tariffs. In Maharashtra, this commission fixes rates for irrigation water in the state for different areas and different crops. This will remove arbitrariness from water rate fixing. If it is integrated with the cropping pattern it will go a long way towards optimal use of water.

Water Situation in Maharashtra

When one comes to the state of Maharashtra, the situation is less promising. It is less blessed with the bounty of water than India is, as a whole .Only 73% of the geographical area in the state is cultivable, only 38% of this can be provided with water for irrigation. Maharashtra's figures are telling when the figures of irrigation potential are looked at. It forms only 21.06% of the cultivable area, whereas the national average is 38.00%

So construction of reservoirs by damming rivers has been the main thrust of policy in the state. There are five major river valleys or irrigation systems in Maharashtra .The state's water policy lays down priorities in the use of water. Domestic use for drinking, cooling, hygiene and sanitation tops the list followed by agriculture and hydroelectric power stations. Industrial and Commercial use follows this. If one looks at the sectoral use of water, 10.05% of water in Maharashtra used for drinking. The industries sector uses 5.60% of water and agricultural sector uses 84.35% of water available in the State.

Water Scenario in Mumbai Metropolitan Area

Mumbai faces a water deficit of about 850 million liters per day, its demand being about 4250 MLD and supply from dams about 3400 MLD. This figure will go up to about 5000 MLD by 2031 as per the MMRDA (Mumbai Metropolitan Regional Development Authority) documents. Though it has started preliminary work on three dams in the region, looming environmental concerns about large river valley projects raise a serious question mark about this route for solving the issue. Accordingly the concerned Steering Committee of the State Government of Maharashtra took the desalination plant proposal forward on 06/06/2010. By 2013 , the Government plans to set up two plants of 100 MLD each at South Mumbai and the suburbs to tackle the water crises. [See India Water Portal promoted by the National Knowledge Commission]

Based on a report by international consultants, Frost & Sullivan, MMRDA has begun preliminary work on the projects. It is going to be on a PPP (Public Private Partnership) model. At present Chennai is the only large city which has a desalination plant at Minjur. It is a small plant with a capacity of 100 MLD and costing Rs. 600 Cores. A second plant of 100 MLD is under construction in Chennai. A proposal of a third plant of 220 MLD is being finalized. One can visualize more water desalination plants coming up in the coastal areas of India.

The State of Gujarat which has 37% of water desalination plants in India of all categories is planning to visualize newer coastal cities with desalination plants, to accommodate the growing population of the state. The cost-benefit analysis also favour desalination plants in the coastal areas. The Minjur plant in Chennai

supplies water at a cost of only 5 paise / litre. Further, the Government of India has promised to fund 70% of the cost of desalination plants in India. Thus, water desalination plants have considerable future in India, especially in the coastal areas.

Conclusion

Water being an natural resource of prime importance, an appropriate policy would require continuous monitoring of various schemes formulated. It should pay particular attention to

- i) Water resource planning
- ii) Water allocation priorities
- iii) Project planning and implementation
- iv) Improving water use capacity
- v) Management of Interstate water disputes and
- vi) Application of modern technologies like water desalination technologies to increase the availability of clean water.

The Government of India has announced that it will unveil a new water policy by March 2012. Water resources Minister Pawan Kumar Bansal recently stated that the Union Government was holding Consultation with all stakeholders in the water sector and was considering suggestions like reservation of water for farming, sustainable farming and safe clean and assured drinking water that have been put forward by some of the stakeholders.

“A new national water policy is in the drafting stage for almost ten years. The first policy was adopted by National Water Resources Council in 1987. This was revised and updated in April 2002. Since then, not only have several major developments taken place in the water sector, but also a greater realization has come that water is a prime natural resource, a basic human need and a precious national asset “ Bansal said at a consultation meeting.

“Hence, to make the new policy truly a national policy, we are ensuring that it has participation of all stakeholders. The representatives of the Panchayati Raj institutions thereof should provide specific feedback for policy inputs that could help address present concerns in water resources sector and help reorient the policy,” Bansal added.

The Indian industry has been calling for encouraging and implementing public-private partnerships in water projects, particularly in urban water supply systems. There has been a demand for a proposal for incentivizing state governments to

move water utilities towards greater financial sustainability to be incorporated into the Water Policy.

It is hoped that the new policy so drafted, will address the concerns of all the stakeholders and will be truly reflective of the aspiration of the people.

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