

# **HOLISTIC APPROACH TOWARDS WATER MANAGEMENT: A FRAMEWORK FOR ACTION**

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## **1.0 SYNOPSIS**

Water is a precious and scarce resource. Unlike the other most essential things for survival of human life viz. food, air and land, water has its own uniqueness in a way that its excess (flood) and deficit (draught) both pose a national level problem.

For a comprehensive management of this resource, it is needed to consider all the related aspects of water management together. Integrated Water Resource Management (IWRM) with emphasis on demand management and resource generation is the need of the hour.

Watershed management and rainwater harvesting have given proven results in various parts of country. Diffusing this information and implementation of such techniques at larger level is required to be done.

Isolating the task of sewage and effluent disposal from fresh water supply and giving it less priority has contributed more and more pollution of water bodies. In order to achieve sustainable water management, these two tasks should be integrated while implementation.

Groundwater, in India, is supporting water supply in many cities as well as a major part of irrigation requirement is also met with. Improper use of groundwater by industries and absence of adequate laws in our country to regulate its usage have led the problem to aggravate further.

Community participation at grass-root level for water management issues is a must. Ironically, this factor, though included in many funded water and wastewater projects in India, has not been properly addressed and hence desired results not achieved.

This paper enumerates some do's and dont's for sustainable water resource management which are relevant in Indian context.

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## **2.0 INTRODUCTION**

Water is a part of the large ecological system. As a resource, contrary to the earlier belief that it was infinitely rechargeable, now it is well understood to be a scarce and precious national and natural resource. It must be planned, developed, conserved and managed on an integrated and environmentally sound basis keeping in view the socio-economic aspects.

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Water in any of the form- rainfall, surface water or groundwater is one and indivisible. In India, development of water resource has been undertaken for specific purposes like Irrigation, flood control, hydro-power generation, drinking water supply and various miscellaneous uses. Agriculture is the greatest user of water, accounting for almost 80% of all consumption.

Availability of water is highly uneven, in terms of both space and time. IWRM advocates the integration of water management efforts with that of other natural resources such as land and forests within the framework of the national economic and social policy.

Heavy dependence on groundwater for drinking water quality as well as irrigation coupled with inadequate recharging efforts, ineffective conjunctive use of water resources and the neglect of traditional practices and systems including rainwater harvesting have resulted in the depletion of ground water levels.

Preventing fresh water bodies from pollution is a challenge before the humanity, as the age old practices of conserving them is no more in our way of life. Furthermore, the present lifestyle and its requirements are eventually degrading the environment considerably in one or other way.

### **3.0 INTEGRATED WATER RESOURCE MANAGEMENT**

The ground rules for IWRM could be construed as under:

- 3.1 **CONSERVATION**: Preservation and nurturing of the water resource that still remains, is the sine qua non for good water management. Conservation as an idea is not merely confined to retaining whatever that is left, but involves a whole range of activities aimed at rejuvenation and propagation.
- 3.2 **PROTECTION**: Securing the resource and insulating it from any shocks of destruction and degradation.
- 3.3 **NON-DEGRADATION**: Ensuring the intrinsic quality of the resource is not lost, while putting the same to use.
- 3.4 **ADMINISTRATION**: That administration is **transparent, accountable** and **participatory** is a major requirement. This acknowledges the fact that the resource cannot be managed from above and finding local solutions to water related problems would ensure effective and efficient management.
- 3.5 **LAW AND POLICY**: Policies in water management should emerge from and evolve out of people's needs and compulsions and be the result of crystallised home spun wisdom.
- 3.6 **EQUITABLE SHARING OF BENEFITS**: The strategy for water resources management should be to conserve the accessible water resources and promote equitable distribution and its judicious use, for the benefit of the local communities.

## **4.0 WATER CONSERVATION – GENERATING WATER WISDOM**

### **4.1 WATERSHED MANAGEMENT AND RAINWATER HARVESTING**

Watershed management and rainwater harvesting has given proven results in various parts of country. Diffusing this information and implementation of such techniques at larger level is required to be done. At the same time, it should be kept in mind that success of these programs is not possible if local knowledge is ignored and community participation is not effectively made.

### **4.2 REDUCING WATER LOSSES**

Many cities of India have UFW<sup>2</sup> figure varying from 13% to 60%<sup>3</sup>. Loss of treated water in this way demands for strategic measures to handle the high leakage prone water systems.

### **4.3 PREVENTION OF POLLUTION**

Preventing fresh water bodies from pollution must not be considered in isolation, but with the air pollution and solid wastes altogether. Through precipitation, the chemicals present in the air and on the land in the form of solid waste get mixed with water and find their course in streams and percolates beneath the ground as well, as had happened in the case of village Bichhri in Udaipur Rajasthan<sup>4</sup>. In this case, the toxic sludge dumped by the chemical industrial plants had damaged the soil, groundwater, human beings, cattle and economy of the entire village.

## **5.0 CHALLENGES AND LEGISLATIVE APPROACH**

5.1 On national and state levels, we have several policies and regulation like Water (Prevention and Control of Pollution) Act, 1974 to regulate pollution discharges and restore water quality of our aquatic resources. Articles 48A and 51A(g) of the Constitution emphasize the importance of water resource and in general overall environment protection.

5.2 Local self governing institutions can hardly take up welfare and development plans, unless they have sufficient funds. However, by the way of seventy third and seventy fourth amendments to the Constitution, the local bodies are now endowed with more powers, responsibilities and financial strength.<sup>5</sup>

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<sup>2</sup> Unaccounted For Water

<sup>3</sup> 2007 Benchmarking and Data Book of Water Utilities in India, published by ADB and Govt. of India

<sup>4</sup> Indian Council for Enviro-Legal Action and Others Vs Union of India and Ors., Writ Petition (Civil) no. 967/1989 with 76/1994

<sup>5</sup> P Leelakrishnan: Environmental Law in India, Third Edition, pages 24 to 25

- 5.3 Despite establishment of Central Groundwater Authority, which proved the need was recognized at central level, till date no regulatory legislations for groundwater usage is in place in the country, except in a few states. One of the possible reasons for this could be the water being a subject of State; no central enforcement could have been applied in mandatory terms. Other reasons could be the fact that the government has not been successful in providing the piped water supply to a significant part of the country.
- 5.4 In India, groundwater available at a place is considered as the property of the land owner. In many developed countries, the ownership of the land doesn't permit the land owner to utilize the groundwater indiscriminately.
- 5.5 Leaving aside the issue of groundwater regulation, we find a large number of legislations and court decisions in India in the field of water related issues are there which appears to be one of the vast in the globe. However, the implementation of the legislations is far from the desired level.

In fact, many times citizens have to knock at the doors of court in order to get basic water supply and drainage facilities.

- 5.6 In an unprecedented decision in year 1991, the Supreme Court of India required all state governments and education boards to take steps for environmental education. Again, as this directive was not fulfilled in the desired way, the Apex Court had to reiterate in MC Mehta Vs Union of India<sup>6</sup> case in a more objective direction for timely action by the concerned authorities.

## **6.0 WHAT SHOULD BE DONE**

- 6.1 IWRM requires not only policy making and its implementation, but critical monitoring of the progress is a must.
- 6.2 Co-ordination between the departments - The vision and policy for the water security has led birth to many departments but whether they have been made equipped to survive and meet the purpose of their existence, is sometimes doubtful. We need to chase till the goal is achieved.
- 6.3 At the same time, lack of co-ordination among the closely related departments also poses difficulty in understanding and addressing of the scope of the issues. This should be made distinct and system should be flexible for any change with time as and when it is envisaged for better management.
- 6.4 Effective measures should be taken for education and awareness regarding water and environment related issues. The best and proven practices in irrigation and village level water bodies' restoration should reach to maximum villages as examples.

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<sup>6</sup> AIR 2004 SC 1193

- 6.5 Use of recycled water for flushing in toilets etc. should be promoted rather than mandated in the new developing residential pockets.
- 6.6 To put a curb on fresh water demand in industries, wastewater recycling should be adopted to the feasible extent on a case to case basis.
- 6.7 Rainwater Harvesting, minimizing leakages, lake conservation issues must be given top priority by the concerned departments.

## **7.0 WHAT SHOULD NOT BE DONE**

- 7.1 Isolation of potable water supply activity and giving priority over the equally important sewage collection, treatment and disposal as well as storm water collection has contributed more and more pollution of water bodies over a long time. Many Indian cities do not have sewerage even for 50% of habitation. Sewage flowing openly in drains not only pollutes the rivers and lake thereby making them unfit for use but also percolates and get mixed with the groundwater which otherwise would have been one of the most reliable potable water source. This has affected mostly rural India as well as urban poor significantly.

In order to achieve sustainable water management, these two activities should be integrated while implementation.

- 7.2 Non-judicious implementation of the water conservation techniques on the cost of ignoring the cost-benefit analysis should be avoided as far as possible. It should be noted here that occurrence of such event is possible only if macro level policy is NOT in place for overall development of the region regardless of state boundaries.
- 7.3 It is a common practice to use treated water for maintaining gardens and parks in various cities including Delhi. In order to achieve water management in better way, this practice should be discouraged. At the same time, wastewater treatment plant effluent may be made available for such purposes.

## **8.0 CONCLUSION**

To take what action is only part of the answer. How to get things done and who does them is often the most sensitive and thus usually neglected part of any action programme. Mechanisms for action are proposed throughout the paper. The roles of the different stakeholders are crucial and it requests for people and organizations to pledge them to act for the good of all.

In order to achieve sustainable water management, the tasks of water supply and sewage disposal should be integrated and equal priority must be given.

The things should be managed in such a way that judiciary should not become the only hope in the system, and the concerned departments take care of their responsibilities at the first place only.

The IWRM approach to understanding our natural and man made water resources is not optional; it is an immediate necessity and can be achieved by tackling the tough issues of capacity building, political accountability, poverty and financing in an integrated way.

The issues identified in the paper and suggestions made thereof will be useful in implementing the measures for IWRM.

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