



## Urban Water Management Policy – Need for an Integrated Approach

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### Abstract

India is facing an acute water crisis. The dearth of safe drinking water has been looming large over the country. This is because of the relentless mismanagement of water. In urban India water management has been a top priority because the increasing population requirements are growing by leaps & bounds. Providing a collective responsibility towards water management is the demand of the day. Hence water management needs capacity building for creating awareness about water management among public. Thus water management requires an integrated approach. It involves multidisciplinary approach involving hydrological, bio, physical, chemical, economic, political, institutional etc. This paper examines the global paradigms towards capacity building & implying the methodology in Indian context.

Keywords: water management, integrated policy, global examples, collective responsibility. Capacity building towards water management awareness

*“The main objective of the national water mission (NWM) is conservation of water, minimizing wastage and ensuring its more equitable distribution both across and within states through integrated water resources development and management”-National Water Mission India 2013*

### Introduction

Water is the world's most valuable of the resources available to all living beings. A need for successful water management is being debated across the world as nearly 2.5 billion people are affected by lack of access to clean water world over. Water is vital to living as life on earth is simply unimaginable without water. It is an essential water resource that shapes regional landscape & vital to

functioning of eco system & all life on this planet. Alterations in the hydrologic regime due to global climate change, demographic explosion & economic necessities water has come under serious threat which is leaving high pressure on environment & population.

### The concept

Water management as a concept refers to the activity of planning



developing distributing & optimizing water resources via practices defined by water policies & regulations. This includes water management towards water treatment such as drinking water, sewage water,, industrial water waste water, flood protection water ,resources management irrigation & water tables. The twelfth five year plan has proposed a paradigm shift in water management in India the twelfth plan focuses on a strategy that is both affordable and sustainable. we believe that Indian cities and industries need to find ways to grow with minimal water and minimal waste . As important as the quantum of water is the problem of its management and equitable supply in ever expanding urban areas .In most cities ,water supply is sourced from long distances and the length of the pipeline , the cost of piping , costs of pumping , its management. (Report on the five year plans 2013).

Besides there are the problems of leakage, outflows, plumbing mismanagement, electricity over connectivity, etc . The greatest challenge is posed by the fact that water is divided very unequally with in cities .Several houses have perennial water supply. Several houses have individual bore wells while several households depend upon municipality tap water. The disproportion is very challenging & the usage patterns also differ depending on this.

## KEY INDICATORS

1. as per the National Sample Survey(NSS),only47per cent of urban households have individual water connection.
2. it is estimated that as much as 40 to 50 % of the water is "lost" in the distribution system.
3. electricity to pump water is between 30-50 % of what most cities spend on their water supply. As the distance increases, the cost of building and then maintaining the water pipeline and linking its uneven distribution network also rises.
4. Nearly 72 % of the urban population live on water half of the required capacity
5. Nearly 92% urban slums do not have access to pure water
6. nearly 65.2 % of the urban households are made to live on 30 litres of water
7. 78.3 % of the urban population do not have direct pipeline taps
8. The outcome is that the government finds it impossible to provide equitable supply of water to all .The urban poor are typically the worst affected as they have to spend a great deal of time and money to obtain water since they do not have house connections.
9. The 2011 census reveals that only 32.7 % of urban Indians are connected to a piped sewage system and 12.6 % -roughly 50



million urban Indians-still do not have access to sanitation.

### Need for paradigm shift

1. a paradigm shift is required to move towards sustainable solutions to urban water and waste management. Investments in water supply must focus on demand management, reducing intra-city inequity and on the quality of water supplied.
2. This will require urban governments to plan strategies to cut distribution losses through bulk water meters and efficiency drives.
3. User charges should plan to cover increasing proportions of operation and maintenance (O&M) costs, while building in equity by providing a "lifeline" amount of charge, with higher tariffs for increasing levels of use.
4. Each city must consider, as the first source of supply, its local water bodies. Therefore, cities must only get funds for water projects, when they have accounted for the water supply from local water bodies and have protected these water bodies and their catchments. This precondition will force protection and build the infrastructure, which will supply and the other to take back the waste.
5. No water scheme will be sanctioned without a sewage component. planning for "full coverage and costs" will lead cities to look for unconventional methods of treating waste.
6. For instance, cities would then consider treatment of sewage in open drains and treatment using alternative biological methods of wastewater treatment. Biological methods of wastewater treatment introduce contact with bacteria, which feed on the organic materials in the wastewater, thereby reducing its Biochemical Oxygen Demand (BOD) content.
7. Through their metabolism, the organic material is transformed into cellular mass, which is no longer in solution but can be precipitated at the bottom of a settling tank or retained as slime on solid surfaces or vegetation in the system. The water exiting system is much clearer than the that entered it.
8. The principle has to be to cut the cost of building the sewerage system, cut the length of the sewerage network and then to treat the waste as a resource turn sewage in to water for irrigation or use in industry



- cities must plan for reuse and recycling of the very beginning of their water and waste plans and not as an afterthought.
9. It is also clear that cities must think through the plan for reuse for affordability and sustainability.
  10. The diverse options for reuse must be factored in for use in agriculture, recharge of water bodies, gardening, and domestic uses. In each case, the treatment plan will be different. But in all cases, the treated effluent will improve the hydrological cycle. It will return water and not waste to the environment. While a larger treatment plant affords economies of scale in operation, a plant fitted to size – collecting the waste of a group of houses, an institution or even colonies – may have higher costs of operations, but there are substantial savings in the piping and pumping cost.
  11. Since groundwater is the single most important source of water in India today, the Twelfth Plan has launched an ambitious aquifer mapping and management programme. The aquifers in each urban center are mapped & equitable distribution of water is focused.

### **Involving strategies**

All levels of stake holder engagement would lead to evolution of more effective solutions to manage water resources which are scarce stakeholder need to cooperate. Social inclusion should be a core element of changes towards sustainable water management promotion of public participation is vital because unequal patterns of urbanization. transition management cycle including stakeholder platforms developing visionary co developing projects using emerging technologies & methodologies engaging grass roots participation participatory budgeting the cities can resolve water management through engaging small communities. Multi stakeholder process needs to be taken up as urban communities always engage themselves in tight 9-5 jobs & forget their participation in community development issues. A rigid time format for urban people cannot be given but urban people need to take some time off in their daily routine.

### **Conclusion**

Thus water management requires an integrated approach It involves multidisciplinary approach involving hydrological bio physical chemical economic political institutional etc. The role of policy makers & policy planners needs a review. With advancement in technology sophisticated sensor networks, smart meters, permanent plumbing, damage free pipeline



mechanism, aquifer mapping, digital water metering, deep computing analytical reading, water can be managed judiciously. All stakeholders should know that water that is saved is 100 times the water earned for posterity. People, organizations, communities, NGOs & governments across the country should work together to design a water strategy. Above all people should be aware about water has no global market it has very international exchange value. Every business has imperative relations with water. Every individual has relativity with water these facts should not be forgotten.

## References

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