



A Critical Evaluation of the main Causes of Water Management Problems in Indian Urban Areas

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Available online at: www.isca.in, www.isca.me

Received 17th May 2015, revised 27th June 2015, accepted 28th July 2015

Abstract

Water one of the main sources for human survival and growth. The Government of India has recognized the importance of proper utilization of this very special solution and has mentioned the special challenges faced with its management. Through this research we have attempted to understand and evaluate the main causes of lack of proper water management in urban cities by using available literature as well involving the officials of local bodies involved in its management. In this research we collected opinions through an open-ended questionnaire from the people mostly involved in its management. The respondents were of the favor of setting up of boards and accountable bodies for proper management of resources.

Keywords: Water management, causes, challenges, urban India.

Introduction

Water is a key regular asset for human survival. Water assumes a basic part in day to day activities within rural and urban population. It is important for all manifestations of farming and a large portion of the modern generation forms. Water additionally gives an extensive variety of environments and ecological administrations.

Presently, as per the report submitted by UNICEF, it has been evaluated that 1 billion individuals on the planet need access to enhanced water supplies and 2.6 billion individuals need sufficient sanitation¹ It is because of the lack of proper management strategies that population in India and across the globe lack basic access to water. The worldwide well-being trouble connected with these conditions is shocking, with an expected 4000–6000 youngsters kicking the bucket every day from maladies connected with absence of access to safe drinking water, deficient sanitation and poor cleanliness.

World Bank in its report specified about India has the capacity to store at around 200 BCM of water, a watered region of around 90 Mha, and an introduced hydropower limit of around 30,000 MW². Then again, because of fast advancement, expanding populace and evil conveyance of water, the demand for this common asset far exceeds its supply. Furthermore, the water segment in India has confronted noteworthy and dangerous issues identified with administration. Despite a sizeable water asset base and inconceivable area, India keeps on struggling to reach its water segment foundation necessities, including operation and upkeep costs. India has around 16 percent of world's population in comparison to just 4 percent of its water assets. With the present populace of more than 1,000 million, the every capita water accessibility is around 1,170 cu

m/individual/year³.

The water supply in most Indian urban areas is accessible for a couple of hours for every day, weight is spasmodic, and the water is of sketchy quality. When compared with other south Asian countries like Lahore, Kathmandu, Bangkok, Beijing, and a normal of 50 urban areas reviewed by the Asian Development Bank in 1997 (ADB 1997). No major Indian city has a 24 hour supply of water, with 4 to 5 hours of supply for every day being the standard. This contrasts with the Asian-Pacific normal of 19 hours for every day supply.

Aim and Objectives: The study is aimed at comprehending the present situation of water administration in urban regions as a mass migration of populace from the rustic zones to urban territories for better livelihood open doors making a weight on the perpetually disintegrating framework including water and power accessibility. To evaluate the accessibility of water in urban regions. To evaluate the systems used to oversee water deficiencies. To comprehend the steps taken by local bodies to assist the management of water supply. To comprehend the issues confronted amid administration of sources from where water is drawn for supply.

Literature Review

Integrated Water Management in urban Areas in India: There are 7,935 towns according to Census 2011 in India and the number is rising with a lot of villages developing into towns. As per the Census of 2011, the urban population of India is 377 million, speaking to about 31% of the aggregate populace⁴.

In India, 64% of the urban populace is secured by standalone and individual connections. The span of water supply is between

an hour's five to six hours in many urban areas. Further, metering of water associations is low in Indian urban communities. 70% of water spillages are from channels of purchaser and because of breaking down of water meters (NSS). Frequent checks of water quality in Indian urban communities is random and water supply mechanism are faulty which is even demonstrated by reports and overviews submitted across forums⁵. Evidence demonstrates that in a developing nation like India with huge population spread unevenly in urban areas; arrangements must be intended for the neighborhood setting management by local bodies so make management of the important resource compelling.

What is Integrated Water Management (IUWM)?: Globally, Integrated Urban Water Management or IUWM is an approach which is being developed to manage water in a comprehensive manner "overseeing freshwater, wastewater, and storm water as segments of a basin wide arrange in an urban range". For countries like India, issues of all inclusive access to water, guaranteed water quality, safe sanitation, and solid administration should pick up conspicuousness' aimed for Sustainability, Good Governance and Empowerment of Local elected bodies⁶. In functional terms, IUWM is the nearby government settling on educated choices about the sort of plans it needs and the funds that will be needed. It is advancing conjunctive utilization of nearby water sources – surface and groundwater alongside reused wastewater and storm water – rather than dependence on a solitary, outside source⁶.

Reform programs for water management in Indian urban Areas: In India the procurement of water is the obligation of the state governments and regional bodies like Municipality's. The Government's part in management and distribution of water resources are focused on arrangement, advancement and, in light of its imposing business model over levy of taxes, it can impact approach through a blend of monetary motivating forces and suasion. States additionally assume a vital part in arrangement making⁷.

Reform in Pricing: Recouping at any rate part (if not all) of the expense of another water framework or of overhauling and keeping up a current water framework is the essential justification for estimating change. It is important to upgrade and maintain the existing water system which needs pricing reform. A few studies have contended that the poor will pay for water on the off chance that it is advantageously and dependably supplied and that fitting evaluating change can advance both proficiency and value⁸.

Financial Reform: A customary component for raising the capital required for water and sewerage framework developments and updates is the metropolitan bond, normally issued without assurances from the state or the central government. Through such securities, private credit markets give cash to neighborhood governments for an altered time of time and at foreordained premium rates. Financing water and

sewerage developments through securities is not basic in South Asia, yet in 1998 Ahmadabad Municipal Corporation (AMC) turned into the first Indian region to utilize this mode of raising capital⁹.

Private Sector Participation in Urban water management: In the course of the most recent decade, privatization to a more noteworthy or less degree has been seen as one of the essential approaches to imbue capital into the urban water division and to beat a portion of the inefficiencies of civil administration. It has been urged after creating nations by global giving orgs as a crucial segment of water division change. Albeit broad in a great part of the creating world, particularly in Latin America, private segment support (PSP) in water conveyance is still uncommon in India. In any case, the 2002 National Water Policy of the Government of India shockingly required the consolation of PSP in water assets. Area 13 peruses: Private part investment ought to be supported in arranging, advancement and administration of water asset ventures for various uses, wherever plausible.²⁴

Other Private Sectors: Occupants that are outside the span of the water utilities meet their water needs in distinctive ways. The three most regular supply choices are imparted standpipes worked by the region, illicit water siphoning and water merchants. To stretch out access to these territories inside a sensible time period, low- to transitional level advances and conveyance instruments will keep on assuming a critical part¹⁰⁻¹¹.

Political Reform: In light of the boundless inefficiencies in the Indian water division, there is unmistakably abundant extension for change. In any case, as in many majority rule governments, any significant change needs to survive (without a doubt, be a piece of) the political procedure, while even little changes in costs oblige open approbation. As Shirley and Cowan contend, a few gimmicks of urban water frameworks make change troublesome. The political profits of water change are regularly low, while change may include surrendering charge of livelihood and interest in general society endeavor. Changes in costs and staff cutbacks are more noticeable to the general population than enhanced working proficiency, diminishment in state appropriations, and little enhancements in quality¹².

Challenges to Water Management in urban Areas

The urban sprawl represents a scope of challenges for urban residents. It causes blockage and natural corruption and builds the expenses of administration conveyance¹³. In a few center and low-wage nations, urban sprawl is exacerbated by urban supremacy – the propensity of a huge portion of the national populace to live in a solitary urban focus, regularly the capital city¹³⁻¹⁴.

The customary urban water-administration methodologies

have been not able to react to existing requests, progressively. Given the difficulties postured by urban development and environmental change, ordinary urban water-administration practice seems old fashioned. Its convention of dealing with the components of the urban water framework as disengaged administrations has prompted an unequal urban "digestion system"¹⁵.

Today's wastewater streams contain an extensive variety of substance toxins that pose dangers to biological systems and drinking water frameworks¹⁶. Controlling the arrival of toxins to the waste streams is a great deal more proficient than performing a troublesome evacuation at treatment plants¹⁷.

Translating the danger posed by mixtures of low level pollution is trying for established researchers, as could be expected under the circumstances blends of mixes are various and the effect on general wellbeing complex¹⁸. The genuine danger is no less hard to consider for the overall population. Regardless of the possibility that deductively sound appraisals reason that a water-supply innovation is the best accessible choice, real arranging and open correspondence can be the unequivocal components for usage.

Looking at the expenses of distinctive strategies is trying as they will rely on upon a scope of variables which may shift fundamentally with area. Besides, the expenses differ incredibly inside and between arrangements. Remembering this proviso, a few examples are uncovered from the reported expenses of water treatment and imperative components incorporate size and vitality costs. Case in point, the expense of on location wastewater recovery is straightforwardly identified with the measure of the plant. A little film bioreactor plant introduced to serve a solitary family unit (creating w 400m³/y) is anticipated to have an aggregate cost in the scope of 3.8e4.2 Us\$/m³. Layer bioreactor plants, up-scaled to serve a piece of houses and creating w 13000 m³/y are anticipated that will cost 1.5e 2.3 Us\$/m³¹⁹. Two expansive methodologies have been embraced to satisfy the fundamental goals of this exploration.

The sample for the present study will be 5 officials working in Planning Department in Bhopal. Prior appointments were fixed with respondents and face to face interviews were conducted. These authorities are straightforwardly included in the arranging, execution and administration of different projects of water administration like giving instruction to individuals on water protection, building of check dams, sanitation administration, and so forth.

Research Methodology

Study Design and Approaches: Two expansive methodologies have been embraced to satisfy the fundamental goals of this exploration. The sample for the present study will be 5 officials working in Planning Department in Bhopal.

Prior appointments were fixed with respondents and face to face interviews were conducted. These authorities are straightforwardly included in the arranging, execution and administration of different projects of water administration like giving instruction to individuals on water protection, building of check dams, sanitation administration, and so forth.

Information Collection: An open-ended interview was utilized to get the suppositions of the individuals or stakeholder focused around face to face approach. Here the respondents are government official in charge of the arranging of activities and elected representatives – i.e. individuals who are in charge of actualizing and planning within the general vicinity and beneficiary too. Thus, these individuals at grass-root level were thought to be the best individual to assess accomplishment of the plan. The focal point of such method is that it helps the respondent gatherings to disperse their individual assessments which at last prompted form agreement on specific issue/ issue joining all the real conclusions.

The system in this methodology is contained two phases of collaborations. The principal stage is to get general perceptions from each one gathering while at the second stage collaborations were ordered into areas focused around their representative constituency.

Information Analysis and Interpretation: The information far gathered provides for us a review of the hardships confronted by authorities and also the residents straightforwardly included in administration of water supply. The major issues distinguished in the administration project were recognized as:

Without characterizing the catchment territories and computing the satisfactory stockpiling limit, awry quantities of tanks are dug focused around individual interest, prompting low water maintenance in dry districts. Cost recovery of water supply in Bhopal is far less satisfactory. Inappropriate pricing, inefficiency of water meter at entry points in Bhopal are the main causes of water wastage. This further impacts the delivery of water due to inadequate recovery of financial cost. Employment era dominated insignificant specialized criteria. No legitimate preparing for economical support of facilities.

Earth structures are more vulnerable to climatic conditions and consequently, oblige additional preliminary measure to achieve toughness and manageability. Shockingly, MCD up to this point has not one or the other embraced any measure of pre-work practicality investigation of area conditions so as to endorse suitable development particular or has proposed any post-development assessment to gauge the acknowledgment of ampleness level. No fitting waste administration because of which water sullyng is discovered to be high.

Recommendation by Respondents

Training and hand-holding the nearby group and the elected representatives for the management works. Mobile water testing offices. Forming specialized water boards responsible for water management. Working with different Ngos in the water part to attempt arrangement level intercessions. Undertaking town sanitation. Developing a piece hydro-land plan. Conducting social reviews Influencing piece level authorities for successful water usage.

Conclusion

The literature centered on water and its management is characterized by the failures of the government and local bodies for the lack of proper management of this vastly useful resource

for human survival. They highlight the lack of accountability as the major reason for mismanagement and it advocates the setting up of resident association and found mentioned in the 74th Amendment, but till date has not been properly understood²⁰.

MCD has been a successful method for including the residents and making them stake holders in administration and upkeep of assets is a striking venture in India as it is moving far from the authentic precedent of governments assuming liability for social welfare plans in rural area. This idea could be replicated in the urban areas by forming water boards and creating responsibility centers in municipal localities and proper training to citizens for proper utilization of the precious resource called “Water”.

Table-1
Questionnaire form

Section 1: Personal Details		
Name of respondent.....		
Gender.....		
Designation		
Section 2: Present Scenario of Water resources and Management		
How do you describe the area in terms water availability and supply?		
What do you do to help the water users cope up with the challenge of shortages?		
How is the coverage in terms of facilities? Please rate on a scale of;		
i. Very bad	ii. Appropriate	iii. Very good
What type of facilities do you advocate for and feel should be developed and why?		
How do you feel about self-supply or private investment in water supply construction and management?		
Are there any challenges you have faced with the maintenance of the water sources? If yes please specify.		
In your opinion what do you feel is lacking and needs to be improved in the management of the water source?		
Section 3: Policies and Strategies		
What support do you provide and what criteria are used for allocating the support?		
Are there any existing policies and strategies adequate enough for the involvement of citizens in the decision making and management of the water resources?		
Which management strategies do you think are necessary to improve water supply and citizen’s involvement in water management in the area?		
In your own opinion what do you think should be taken into consideration when analyzing the impact of water supply and sustainability?		

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