

EVOLVING WATER MANAGEMENT AS A CONCEPT

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WATER! This five lettered word since centuries has imbued a sense of life with a calming effect. But of late it has been heaped with a sense of conflict or being described as the possible cause of inter-state conflicts or conflicts between the nations and that include the Indian sub-continent as well. Water, the nature's most valuable life sustaining gift to the mankind is on the threshold of being described as the most-mismanaged essential commodity and so the related challenges and conflicts.

This situation also brings forth the importance of water management. This key area has been attracting attention of the Centre and the state governments but the approach has mostly been confined to launching awareness campaigns focused on water conservation both in the domestic, urban and rural, and agricultural usages. Water management as a concept that entails societal awareness, study and research based on optimal use of the available resource has yet to fully evolve notwithstanding efforts made by the governments from time to time.

The water management in the Indian context should have started way back with exploding the myth that water is a never ending commodity and that it is a good solvent. A misconception has been carried from generation to generation that flowing waters never get contaminated and that the rivers would consume everything and still stay pure. This led to the rivers being converted into dumping grounds.

The concept that started at family levels has continued till date and assumed serious proportions with the

rapid industrialisation. The rivers have become free dumping grounds for domestic and industrial wastes with even waste management remaining low on the priority list. This is despite the fact that waste management in the increasingly urbanised world is directly related to the quality of water.



There is no clarity yet on water as a subject from the point of view of this natural resource conservation and management. Should the water be included in the national list, it is a state subject now, or should some important rivers be nationalised for better management? These are some important questions that need our attention.

Water has not been treated as a concurrent subject for this purpose. No effort has so far been made to evolve a common agenda between the Centre and the states by making it part of some kind of common list. Even if this required changes in the Constitution, it is need of the hour and it must be done.

Despite the existence of a Ministry for Water Resources various aspects of water utilisation come under the purview of different Ministries such as the Agriculture, Urban and Rural Development. The subject also touches various other Ministries in a piecemeal manner. A nodal Ministry with adequate powers and armed with an effective National Water Policy can go a long way in achieving the much delayed water management goals.

Water is the lifeline and its significance has to be taught from the very beginning. Yes, the awareness campaigns are a must to draw on the significance of the dwindling resource and growing demand. But it is of utmost importance that water as a subject should be made part of the curriculum beginning from schools to the higher levels of study that would ultimately lead to much needed research programmes.

If one single subject needs urgent focus in terms of research, it is water. The question of its optimal use is all encompassing,

which requires research in a wide range of issues related to water. Agriculture research has over the years focused on various aspects of it including developing new varieties of seeds requiring less water to germinate but most other aspects pertaining to water management and conservation are yet to be researched.

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And the only way to lay greater focus on research on water related aspects is to introduce it as a subject at the grass-roots levels to produce more scholars and researchers in this field. For now it could supplement the ongoing policies and programmes but ultimately in the years to come water-educated generation would become the backbone of any water management plan.

Apart from making water a subject of research there is a need to introduce short-duration courses in water management covering different aspects of the problem arising in the agriculture and irrigation fields and due to mismanagement in the urban civic bodies. Such courses, not necessarily needing a higher academic qualification, could be prepared with an aim to create a trained force which could lead to self-sustained ventures, provide consultancy services at the grassroots levels or be absorbed in government and private jobs as the opportunity arises.

A natural corollary of water studies, apart from helping managing the resource, would be creating new avenues of employment as suggested above. The entire water management studies have to be an integrated and well-crafted effort in line with the serious challenge to narrow the ever-increasing gap between demand and supply.

Global warming is a new challenge which has a direct impact on the water resources. Any effort at evolving water management techniques without taking into account this aspect would only partially address the problem. There is a strong case for integrating the water management and global warming studies in certain cases.

The challenge for India begins from the basic fact that it constitutes 17 per cent of the World's population but has only four per cent of Global water resource. On top of that growing population and industrialisation and poor water supply and management sys-

tems have reduced per capita water availability. For example 50 per cent of the usable water goes waste due to inefficient water supply systems and over 70 per cent of the surface water and ground water are contaminated with little effort to make this component usable as various studies have pointed out.

As it is, the management of existing infrastructure and of water resources is one of the most daunting tasks. Predominantly the government till date is considered to be the sole repository to discharge these duties. Fact of the matter is that the challenge on the aqua front is much grave to be tackled by the government alone. There has to be a pool of expertise and involvement at all levels. This should include common man and public as well as private sector to take up water studies and management at war-footing in view of the enormity of the problem. Time has also come to take harsh measures to manage the fast depleting resources.

The challenges are also emanating from the fact that wide stretches of main rivers in the country have been polluted due to mindless urbanisation without proper planning and related infrastructure. The scenario has become more serious with alarming decline in groundwater levels in many states. Absence of any water management effort has made the matters worse.

The statistics provided by the Ministry of Environment, Forest and Climate Change in reply to a question in Lok Sabha says that discharge of untreated and partially treated sewage from cities and towns and industrial effluents are a major source of river pollution.

Referring to a Central Pollution Control Board (CPCB) report of February 2015, the Ministry stated that 302 polluted river stretches have been identified in 275 rivers. The list includes all major and some small rivers. The identification was based on Bio-chemical Oxygen Demand levels which is a key indicator of organic pol-

lution.

The need to treat water as a broad-based subject for the purpose of management and conservation further arises with the CPCB report stating that setting up proper facilities for collection, transportation and treatment of sewage being generated and ensuring that untreated sewage does not fall into the rivers was the responsibility of the state governments. The fact that various rivers coming under National River Conservation Plan, and the National Ganga River Basin Authority fall under the purview of the Water Resources Ministry while the Ministry of Environment, Forest and Climate Change only provides a back up and that water remains to be a state subject speaks loudly about the need for greater coordination among all the stakeholders at all levels.

There is a marked change from the situation prevailing a few years back. But this is not sufficient. Proper harnessing of water resources to ensure optimal use would require a three pronged strategy that should cover environmental, economic and social aspects of the issue. This is only possible by bringing all stakeholders including public at large under one umbrella.

A holistic view has to be taken to achieve this as different agencies have different kind of responsibilities for Water Resource Management. First and foremost is to have in place the river basin plans and protection measures that included drainage and flood control. Secondly, the water resource protection should be in place with a focus on ground and surface water resources, human health, livestock and aquatic environment.

A prerequisite for successful management of any resource and more so water is possessing accurate knowledge of the available resource, the uses and pressures, it is subjected to, and related measures at its protection and optimal use. That makes introduction of water studies as a subject much more imperative.

The future of water resource depends on how it is sustained and sustainability would in turn depend on effective management of the resource. The strategy on this front also needs to be based on striking a balance between human needs and the available resources. There is a need to develop new and sustainable fresh water systems. This is where the new management strategies and research will prove handy. Another vital component of such a package would also be the time tested techniques which could form basis of new researches.

The institutional reforms in the water sector, therefore, should be the top priority in any water management plan. The reforms should include consulting stakeholders in an institutionalised manner, educating and updating of professionals related to water studies and a proper and effective mechanism for creating awareness through spread of the knowledge so generated.

Such reforms would also require setting up of water management mechanisms at the Centre and state levels for better coordination at all levels. In the long run it would entail preparing plans for river basin studies, which is being currently done in some cases, and water management at the state level.

Lastly and more importantly the water resources management in its totality should be made a key area of studies and research in universities and other academic and training institutes.

The only way to cap the growing intra-state and inter-state conflicts over water is through planned water management mechanism. The demands for quality water would be better met through conciliation and coordination using this mechanism.

If only water conflicts are prevented within the country that we would be able to prevent water wars on international front.

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