New Institutional Structure for Water Security in India

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There has been no significant change in the knowledge-base and institutional structure for managing water systems since colonial rule. This makes the recent efforts of the Ministry of Water Resources for restructuring the Central Water Commission and the Central Ground Water Board significant. This article argues that the effort should be backed by interdisciplinary studies that see surface water and groundwater as ecologically connected.

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In the past two or three decades, especially following the publication in 1992 of the *Dublin Statement on Water and Sustainable Development*, the global community of water professionals has been extensively involved in generating new and interdisciplinary ways of handling the challenges of water security in a world facing growing water scarcity. As a result, water governance worldwide has started to change in fundamental ways. The European Union in general, and countries like South Africa and Australia, have put in place new institutional structures for water systems management. In the case of India, the monsoon-dominated climate adds to the problems of scarcity by the temporal concentration of very large parts of the annual precipitation within the three months of July to September. In China, another country with monsoon-dominated climate, some important institutional innovations were undertaken in the 1950s to address periodic devastating floods and constant water scarcity in the Yellow River and Yangtze basins. In India, there has not been any basic transformation in both the knowledge base and institutional structure for managing water systems since the end of the British rule in 1947 (Bandyopadhyay 2009; Briscoe and Malik 2006). This makes the present efforts of the Ministry of Water Resources (MoWR) for restructuring of the Central Water Commission (CWC) and the Central Ground Water Board (CGWB) very potent.

Over the past two decades independent professionals have been recommending changes in the institutional structure of water governance in the country. That hundreds of millions of people still do not have access to safe drinking water is a matter of shame and concern. Recent initiative at the MoWR in the formation of a committee chaired by Mihir Shah on the restructuring of the CWC and the CGWB has to be seen in that perspective. The older way of looking at surface water and groundwater separately has to give way to a holistic vision where the two are seen as ecologically-connected. Thus, water governance has to be based on a broad interdisciplinary framework, within which the various activities of the existing CWC and CGWB could be distributed and

internalised, as part of a larger process of deeper transformation. The need is for fundamental changes and not minor alterations within the existing institutional structures. In that background, the institutional responsibilities of a restructured water governance strategy are listed below:

(i) Institutions for water governance at various spatial levels, from the country level to the local administrative units based on ideas of integrated river basin management (IRBM).

(ii) Institutions for generation, storage and dissemination of quantified and detailed data on the hydrological cycle as relevant for India.

(iii) Institutions for interdisciplinary research on water systems and periodic updating of the knowledge base of governmental officials and water policymakers.

(iv) Institutions for promoting innovations in water technologies, including technologies for de-pollution of water systems.

(v) Institutions for the formulation of laws and policies based on interdisciplinary knowledge for utilisation and conservation of water systems giving highest priority to public interest and participation in decision-making processes.

(vi) Institutions offering easy but informed mechanisms for resolution of water conflicts at diverse spatial levels, especially the ones that are trans-boundary in nature.

Beyond Water Engineering

With growing demands for water supply for irrigation, navigation, industries, urban areas, fisheries and sustaining aquatic ecosystems, water governance has become a complex subject, far beyond simple water engineering. A very informed attention and action at all spatial levels, from a village to the country as a whole, is needed. The priority and justifications for making IRBM the basis for such a governance are now accepted worldwide. The geopolitics of water engineering and interventions to alter its natural distribution in India has so far been guided by a project mode. A restructuring of water governance should make way for a holistic upgradation to the spatial level of river basins. It is strongly suggested that river basin organisations (RBOs) with due institutional authority for keeping the river basin and groundwater aquifers in good ecological status and productivity be established. These authorities will be responsible for allocations of river flows and groundwater to competing needs and demands in the basin.

The various states in the basin will have the authority of executing water use within such an allocation. In this way, there will be a gradual and ecologically continuous distribution of authority from the nation to the RBOs to the basin states, and further down below to the towns and villages. This will also reduce incidences of interstate water disputes, which India has become well known for. There are several examples in many parts of the world of successful transition to functioning and effective RBOs. What is needed is a political will and courage to avoid water conflicts in the long run than to reap short-term political harvests from continuing conflicts.

Further, effective functioning of RBOs will depend on the availability of recent knowledge and quantitative scientific data on the movement of water along all the links within the hydrological cycle, as relevant for the respective basins. Hence, an institution with appropriate authority for generation, storage and dissemination of such data is needed at various levels, from the national to river basins to the village levels. Presently, data are collected and made available for some limited aspects of the hydrological cycle, like stream flow or the depth of the groundwater table. Confidentiality of hydrological data, especially on the rivers originating in the Himalayas, has been an obstacle for the growth of modern water science in India. Briscoe and Malik (2006) have argued strongly for open access data. A much wider database and conceptual framework is needed for shaping the interdisciplinary approach in the new institutions for IRBM. It is suggested that such a body for creating a high quality and transparent database be placed within the institutional structure of the RBOs.

Interdisciplinary Approach

There is a serious gap in the present water governance process in India between the frontiers of knowledge and the knowledge base that runs the governmental process. The new institutional structures need to be in close touch with the interdisciplinary knowledge front in water science and policy. For this, institutions of water science and policy research, in particular on the much neglected social, political, economic and ecological dimensions and the schools of water engineering in general, have to be prompted to be leaders in knowledge through coordinated and sustained research programmes. In addition, these institutions should have wider professional linkages with various parts of the MoWR and the RBOs, for example through periodic updating programmes for continued capacity building in the governmental structure. This will ensure that professional stagnancy does not set in.

With a limited availability of water, water security will depend heavily on technological innovations aimed at better efficiency of water use and better de-pollution from waste water. Thus, water-based technologies need higher support and visibility in the new structure. Since this aspect of water use is also linked with the people in general, space for public information and participation in related research and dissemination needs to be ensured.

Addressing the challenge of maintaining water security requires the support of a comprehensive legal structure. The urgency of the situation with respect to water needs fundamental changes in the property rights and responsibilities of the citizens supported by an effective but participatory regulatory institution. Water policy and laws in India have not really changed much for over a century. In contrast, many new ideas on water science and policy have emerged during this period and creation of a new legislative framework will be more than timely.

The history of water conflicts in India implies that success of the new institutions, like the RBOs, will depend on the availability of efficient and simple conflict resolution mechanisms. Otherwise, water security of India in the future years will not be able to proceed forward without entanglements in extended court cases. The challenge of designing suitable legal framework at various spatial levels in various parts of India is a challenging

task that cannot be avoided in the process of restructuring, if it has to succeed.

The initiative of the MoWR for restructuring the CWC and the CGWB needs to be, in due course of time, expanded to the restructuring in general of water governance in India. It offers an opportunity for taking professionally informed and courageous steps of fundamental changes for which the country will remain obliged forever to those who are able to restructure the system beyond cosmetic changes.

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