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EMERGING ISSUES IN WATER MANAGEMENT – THE QUESTION OF OWNERSHIP

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PREAMBLE

India has made considerable progress in increasing the production of food and other agricultural commodities but the sustainability of India's agricultural development, food security and poverty reduction strategies are being questioned in several quarters due to an imminent water crises. Agricultural sector accounts for more than 80 per cent of total water used in India. However, only around 40 per cent of the net sown area is reportedly endowed with water, albeit limited, for irrigation. Further, with the growing population, the per capita availability of water is continuously going down and is likely to go below the scarcity level by 2025. Prudent use of available water, therefore, assumes critical importance for human and livestock sustenance.

Groundwater accounts for around 58 percent of the total irrigated area in the country, whereas the share of groundwater in meeting the drinking water needs, is much higher at around 80 percent. Nevertheless, the surface sources are quite important as these help in recharging the groundwater in several areas.

Wasteful use of canal water has created the problems of water logging in head and middle reaches of canal command areas, whereas tail end farmers continue to suffer due to lack of access to this water. The situation is further aggravated by low irrigation system efficiency. Overdrawal of groundwater is leading to depletion of aquifers. Tanks and wells are increasingly going dry due to unscientific water harnessing, and water conflicts are increasing. Rivers are also drying up. The demand for water in urban areas is increasing and efforts to transport water from rural to urban areas is being resisted by rural communities.

Importance of conservation and efficient use of water figures prominently in plan documents, policy statements and discourses. But emphasis and pre-occupation continue to be overwhelmingly in favour of massive investments to augment the supply of water. Very little has been done in changing the ways supply systems are organized and managed as well as in demand side management including the reformulation of policies that influence the attitude and practices at the users' end. Agricultural policies are now emphasizing high value non-cereal crops, which are mostly water-intensive crops. The use of water per unit output of rice and milk is very high but these are important for our food and nutritional security. Nevertheless, there are signs that attitudes are beginning to change. Some of the attempted changes are indeed significant in scope and intent but these are grossly inadequate and their implementation too weak to make a significant dent on the overall situation.

While in principle, there is a general consensus that, (a) water resource sector needs a holistic view; (b) all stakeholders need to be involved in its management; and (c) water being no more a free good, there ought to be some defined principle of water allocation. There is thus considerable hiatus between principles and practices. The gaps between principles and practices are mainly due to factors associated with absence of clear-cut property rights and lack of governance or mis-governance in water sector. It is now

widely recognized that the epicentre of the problem lies in the current social, economic, legal and governance framework of water resource development, distribution and utilization.

ROLE OF THE STATE AND GOVERNANCE

The imminent water crisis in India is being ascribed to, (a) the growing gap between the scarcity value of water and realized value under the current pattern of water use and management; (b) weak governance and mis-governance of water resources by the state; and (c) the absence of clear cut property regime or ownership of water. Traditionally, water was perceived to be a free good available from the nature. This perception has not materially changed. Existing institutional, legal and governance framework relating to acquisition, distribution and utilization of water has not helped in changing this perception.

The role of the `state' in sustainable management of water resources is and will continue to be quite critical. While the sovereign right of the state on any natural resource like water is undisputed, the role a government should assume to exercise this right has become questionable and needs to be dispassionately defined through consensus among stakeholders. It has become repeatedly clear that the governments have, by and large, not been successful in both supply and demand side management of water resources.

The role of the state as planner and manager of present and future demand can be assessed by water policy, water laws and water administrative machinery. The objectives and goals of water policy, howsoever meticulously formulated, can not be achieved without appropriate water laws and efficient implementation mechanisms. The National and State Water Policies do not address all the relevant issues in proper perspective. The policy documents, though recognize the emerging water crisis but fail to provide well-defined instruments to improve the situation of increasing groundwater depletion and inefficient management of surface irrigation systems.

World over, the 'state' or governments have been guided by three different but interrelated legal doctrines viz.: (a) doctrine of riparian rights; (b) doctrine of prior appropriation; and (c) doctrine of public trust. In the Indian context, laws relating to water are traced to the Indian Easement Act, 1882. In the case of surface water, this follows the doctrine of riparian rights. During the British rule, the government regulated surface water for irrigation under various irrigation statutes. The Indian Easement Act, 1882 also provided unlimited right on groundwater to the owner of overlying land. There was no provision for 'prior appropriation' or 'reasonable use'.

The present legal system related to water in India represents a complex amalgam of colonial legislation, customary laws and post-independent constitutional and legal provisions. The legal framework of irrigation in India implicitly presumes the absolute right of the State over water resources. As per Indian Constitution, water is in the State list (Entry 17 – List II States), subject to the provisions of Entry 56 of List I (Union List). This implies that the Union government can also assume responsibility in the matters related to inter-state rivers, to be specifically declared by the Parliament through a specific law. The Centre lacks jurisdiction to enact legislation for regulation and control of groundwater. However, three important developments require a mention. First, the Centre formulated a Model Groundwater (Control and Regulation) Bill, 1970 and circulated to the states for adoption. The Bill postulated some kind of water permit system linked to land rights. However, the Bill did not find takers and was reportedly not

adopted by any state. Second, the National Commission on Agriculture (1976) again emphasized the need for groundwater legislation. The Commission suggested some kind of warabandi system in groundwater also. And third, a much-improved version of the Model Bill came in 1992. The Model Bill of 1992 *inter alia* suggested for mandatory installation of water meters by all the groundwater permit holders including the farmers. Only eight states have so far enacted legislation to regulate groundwater. Groundwater authorities have been set up in the states but very few powers as provided in the Model Bill are vested with State Groundwater Boards/departments. Further, as the states have failed to check the depletion of groundwater, the Supreme Court of India intervened and, under the Environment Protection Act, created and empowered Central Groundwater Authority to assess and declare over exploited areas as 'dark zones' prohibiting further extraction of groundwater in such areas. Though this was a good initiative but it meant superseding the powers of the state by the Centre, which is perhaps against the constitutional provisions. The Centre has established Central Groundwater Board, which now has 15023 hydrographic stations to monitor the groundwater situation in different parts of the country. However, by and large, the groundwater continues to be unregulated. Only indirect administrative measures like restricting the institutional financing of groundwater extraction is being used. But these measures further increase the inequalities, as those with sufficient resources are able to dig wells without any check. Nevertheless, in the matter of protection of water quality and settlement of inter-state river water disputes (Water Disputes Act, 1956), some effective legal provisions are in place. In 1983, a National Water Resource Council was also set up.

The wasteful use of surface water, over-drawl of groundwater and consequent ecological damages can be attributed to the absence, failure, or even the inability of the governments, (a) to change the legal framework that is outdated; (b) to bring in new framework where it does not exist; and (c) establish and enforce effectively the legal framework that exists now. Every public irrigation system has rules regarding allocation, scheduling and penalties for violations, but these are flouted with impunity. Even the legal framework for groundwater could not be clearly defined. Whatever legal provisions exist, could not be effectively implemented. The law allows landowners unrestricted right of extraction of groundwater from their plots. There are, of-course, regulations on effective spacing between wells and on construction of new wells in over exploited areas but there is no monitoring. The policies relating to pricing of water and electricity for pumping water are perceived to have ignored the degree of scarcity and consequently water use efficiency. By and large, there is enough evidence of state failure and ineffective governance in managing the precious water resources.

THE ISSUES RELATING TO THE OWNERSHIP OF WATER

Improving efficiency and equity in land resources, was attempted by undertaking land reforms. Since ownership of land is relatively well defined, it was possible to do so. Lot of research efforts went into understanding of gains and losses from tenancy reforms and conferment of land rights. However, in the case of water resources, the ownership and use rights vary across water sources, usage and states. The water use is guided by multiple property regimes viz. common property, common pool resource, private resource and state owned regime. The issue is further complicated when ownership and use are combination of these regimes. Above all, there is the perception of water users about the resource, which ultimately guide its usage pattern and efficiency of use or sustainability of the resource. For example, even in drought prone areas, people perceive groundwater as unlimited and use it to maximize short run profits. In the case of a village pond, while water is considered a common pool resource and there are unwritten customs of sharing

it, the water going to recharge the well from the pond becomes a private property. The owner of such a well even in a period of scarcity may not agree to share water with the community. Efforts of a community in conserving water, which help in recharging individual wells, result in building the private poverty which may not be equitably shared with the other members of the community. Recharging of wells, by public funded countrywide watershed development programmes, is a good example of public investment becoming a private property.

The world over, as countries move from a state of plenty to that of scarcity, there is an increasing tendency of centralized control of water. Several countries have declared water as a state Property. However, they allow decentralized independent decision-making. But on the other side, there are countries (UK, USA) which have opted for complete privatization. But here also, there are prioritized (earlier use) and correlative (land related) rights and these rights are recognized as property rights and are as such transferable.

Issues relating to ownership of water are not only complex but also different than for other resources. The use, control and ownership of water is linked to the ownership of land and irrigation structures. Thus, water ownership issue cannot be discussed in isolation. Further, ownership issue relating to surface water and groundwater needs to be dealt with differently. Watershed or inter-basin management programmes have suffered mainly on account of not being able to address the issue of ownership regime. Howsoever difficult the issue may be, establishment of some sort of water rights and responsibility system, specifying the withdrawal or entitlement of water, is critical for prudent use of water resources.

There are five possible property regimes and water, in India, has the presence of all of them.

(a) Individual private property (groundwater)
(b) State or public property (surface water resources)
(c) Common property (tanks with PRIs or communities)
(d) Common Pool Resource - access to identified group but no one has a right (village tanks)
(e) No man's property (open access water bodies)

The problems with state ownership and management are well known. As regards the commons, these are bound to degrade unless there is a body of people responsible for their use and maintenance. If groundwater remains under common property regime, it is bound to be over exploited because if an individual cooperates with others, he looses and if he does not cooperate, he does not loose any thing. Water thefts from government owned tanks are also not uncommon.

While some ownership or property regime is necessary, complete private ownership of water as a substitute for state or community controlled management and operation is also being questioned. Several non-governmental and civil society organizations have initiated action for social movements to influence the stakeholders including governments and the water users. There are quite a few global initiatives also. People's World Water Forum argues that no one can have a right to steal a natural resource. The attempts by the governments to raise water tariffs are being interpreted by civil society organizations as a step towards corporatisation of water resources. Globally, privatization of water has been a mixed but mostly discouraging experience. Privatization of water utilities in

Jakarta, Manilla and Cochabamsa (Bolivia) left both firms and clients dissatisfied. Nevertheless, in Penang and China, these are reported to be successful.

Efforts to privatize some rivers have also failed. There is also a lack of clarity in the privatization model. The privatization could take several forms viz. (a) Build-Operate and Transfer (BOT); (b) privatization of development only; (c) privatization of management only; (d) complete transfer of ownership encompassing (a), (b), and (c) above.

Some argue that while water for drinking and domestic use can qualify to be a fundamental human right, water for other economic uses need not have the same ethical qualification. Transferability and exchangeability of water rights are critical to capture and reflect the scarcity and use value of water through price signals and thus, guide water allocation to attain economic efficiency.

Those who argue for the sole control of local communities (macro, meso or micro water shed basis) on water resources have raised several questions on the New National Water Policy adopted by the Government of India in April 2002, superseding the earlier policies. It is their contention that India has enough water resources to meet the needs of drinking water and sustainable irrigated agriculture, but it requires local communities' control on management of water. It is only through community involvement that cropping patterns of different regions can be dovetailed to hydro-geological and agro-climatic bio-diversity of micro regions.

Water is a natural renewable resource and is the ecological basis of all life. As its sustainability and equitable allocation depend on cooperation among community members, the people should own or decide who should manage it. However, the ultimate custodian of people's resource could be the State.

There is also a question with the common law related to the riparian owner. Every riparian owner is entitled to continued water flow of a natural stream in its natural condition, without any obstruction and pollution. This solves the problem of other riparian owners but does not establish claims of those living in the interiors.

What is, therefore, needed is a well-defined combination of state, community and private ownership and their clearly defined roles/responsibilities in water management. Their relative roles may vary according to basin, sub-basin and micro watershed and from region to region and project to project.

Given the complexity and wide ranging issues involved in current water use and ownership regimes, NAAS organized a Symposium on 'Emerging Issues in Water Management–The Question of Ownership' on January 15, 2005 at Jaipur. The Symposium was organized at the Institute of Development Studies (IDSJ) under the Convenorship of Prof. Shabd S. Acharya, Honorary Professor of IDSJ, with Prof. Manohar S. Rathore, Senior Fellow of IDSJ, as Co-convenor. The Symposium brought together around 40 experts from social science research institutes, agricultural universities, general universities, international water management institute, ICRISAT, development administration, and non-governmental organizations working on natural resources and water management aspects. The concept paper developed by the Convenor and Co-Convenor was sent to the participants in advance to set the tone for discussions. The Symposium was divided into following four technical sessions, each representing a major sub-theme:

- Water Ownership and Property Regime including Legal Framework

- Economic Policy Impacting Water Use, Water Management and Water Markets in Rural Areas
- Community Management and People's Perception on Water Related Issues
- Science & Technological Aspects of Water Management in Agriculture

In each technical session, there was a keynote presentation on one of the four identified sub-themes, followed by an open discussion. The recommendations contained in this document are an outcome of the deliberations in the Symposium.

RECOMMENDATIONS

(1) While the 'state' should continue to have a sovereign right over a natural resource like water, the role of the government in exercising this right needs to be carefully defined.

(2) Water being a precious natural and common property resource, vital to the sustenance of human, animal and plant life, policies, legal framework and administrative system dealing with water resource management must take in to account the principles of access, justice and social equity.

(3) In the case of water, all three aspects viz. development, regulation, and management, are of considerable importance and water policy should address to all of these.

(4) Water, as a resource should not be made a private property. However, only use rights on equitable basis should be given. There is a need for treating drinking water in rights mode and irrigation water in the economic mode. Water rights need to be de-linked from land rights.

(5) A judicious combination of government and community control and private water rights, the proportion varying from macro, meso and micro level and from region to region, is perhaps desirable. Such combinations can be under public trust framework when government and community has a control over water as a trustee and people have well defined usufructuary rights, i.e. right to use and profit from another's property on the condition that it remains uninjured.

(6) Private water rights and community water rights can be accommodated within the public trust arrangement where the state or community has a ownership right enabling it to exercise social control so as to promote ecological security and social equity, while individual members have private and transferable user rights so as to promote economic efficiency in water use.

(7) The water rights system can simultaneously address three goals of ecological security, economic efficiency and social equity. While the ecology and equity could be taken care at the stage of allocation of water rights, efficiency could be achieved at the stage of water utilization through the transferability of water rights. Moreover, since the water rights system, specially the one based on the public trust framework allows social control and decision making at the stage of allocation of rights and decentralized private decision making at the stage of water utilization, it provides an institutional synthesis with greater conflict resolution potential.

(8) The need for recognizing the common property resource character of water can be met by transferring the control of water to local communities or user groups,

equipped with technical information on aquifers and their storage, recharge and transmission characteristics.

(9) The enforcement and administration of established rights system should be left to the local trustees who can be PRIs, WUAs or outlet level communities.

(10) There is a need to purge out the lingering colonial vestiges in the realm of water laws and make them relevant to the current socio-economic requirements of the country. There is a need for comprehensive legal reforms bringing together central and state laws, rules and orders, customary laws and court decisions pertaining to water that may necessitate a constitutional amendment.

(11) Water related legal reforms should incorporate, (a) economic incentives for water conservation; (b) conferment of private transferable water rights to water users; (c) allocation of transferable water rights to the landless; (d) allocation of water rights under public trust framework be demarcated appropriately at the level of state, community and individual users; and (e) unambiguous and appropriate definition of the community at the macro, meso and micro basin/watershed levels.

(12) The doctrine of riparian rights needs to be re-interpreted. The public claim on water as public and common property resource is reflected in legal concepts as 'reasonable', 'beneficial', non-wasteful' and 'public trust'. Water laws should take these principles into account. The law should also incorporate notions of accountability and provide for expeditious remedies for violation of rights. The law should also recognize hydrological unity of water resources and provide for conjunctive use of surface and groundwater resulting in integration of administration of surface water rights and groundwater rights.

(13) Groundwater is too valuable a natural resource to be left unmanaged. In the absence of well defined property rights to it and with rapidly growing water markets and wide spread use of modern water extraction technologies, groundwater is prone to exploitation and is in fact being over-exploited in many arid, semi-arid, hard rock areas, and even in a State like Punjab. For avoiding its over-exploitation and depletion, it is necessary to change the status of groundwater from a common pool resource to a cooperative or joint property of the users through creation of cooperative usufructuary rights and vesting them in water users' cooperative societies. Implementation of this model of cooperative management of groundwater would require, among other things, enactment of a groundwater law for governing the use of groundwater, creation of groundwater management zones/districts/sub-districts, organizing water users into some sort of formal associations and helping the water user bodies with technical information, funds and management advice.

(14) The groundwater law should generally provide for the following but the laws/rules should be region specific:
   (a) Delineation of water management zones/units/blocks.
   (b) Formation of water users and handing over the management to user associations or cooperatives.
   (c) Creation of well defined usufructuary groups and individual rights in groundwater.
   (d) Framing of practicable rules and guidelines for regulating number, size and spacing of wells/tube wells.
   (e) Leasing by the state of usufructuary water rights to associations/cooperatives.

(f) Allowing usufructuary rights to be sold among members of the associations/cooperatives.
(g) Permitting associations or cooperatives to acquire private wells/tube wells for common/group use and install/construct new wells/tube wells.
(h) Recharging of aquifers.
(i) Fixing water charges taking into account the real resource cost of water.

(15) In the case of surface water, there is a need for a similar legal and management structure with allocation of water rights to groups/associations/cooperatives on the basis of present allocation of water and transfer of the management to these groups.

(16) At the user's level, out of several options, only volumetric rationing of water, coupled to unit pricing can result in effective reduction in demand for water and groundwater draft.

(17) Social engineering of the formation of water users associations becomes much easier under the public trust framework (as against the private property regime), mainly, due to five main factors: (a) there are no conflicts of ownerships; (b) state is not the dictating partner; (c) local level flexibility is feasible in organizing the association and managing the water resources; and (d) it is possible to clearly define the user charges.

(18) For success, sustenance and viability of participatory or water users institutions, several factors are important, which should be recognized. The first pre-condition is that it should emerge from an earnestly felt need of the stakeholders or water users. Such a need may arise out of the stress conditions imposed by the earlier system of management. The second set of factors is the intra-institutional requirements that include definition of membership, role of members, mechanism set in order to resolve conflicts, qualities of leadership, financial stake of members, and the size of the institution. The third set includes such extra institutional factors like financial institutions, marketing system, other local organizations, policy environment, availability of infrastructure and mechanism of interaction with the state. And the fourth set of factors relates to transparency in financial matters and decision making within the organization.

(19) Continuous watch on water balance (demand and supply) situation across agro-climatic and hydro-geological zones will be necessary to demarcate water grids, on the lines of power grids, to promote and plan management of water resources, including inter-basin transfers of water.

(20) A mere five-percent saving of water in agricultural sector can spare sufficient water to meet the demand of non-agricultural sectors. Substantial water is lost through evaporation in the unlined watercourses. The seepage is also not insignificant. Therefore, popularization and encouragement of appropriate water saving scientific methods and technologies should be in-built into transfer of technology packages in different agro-climatic regions and sub-regions.

(21) National Agricultural Research System needs to emphasize development of water saving varieties/cultivars, agronomic practices, and mechanical devices suitable for different agro-climatic regions and sub-regions. In addition, research on economic efficiency on water use under alternate water property regimes also needs high priority.

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