

# GOVERNANCE AND GROUNDWATER

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It is now a well known fact that India is the world's largest user of groundwater for agriculture. At the same time, India's groundwater story (as Tushaar Shah, one of the most experienced researchers of groundwater in India, puts it) is unique in its 'drivers' being different from those in other parts of the world. And therefore, responses to groundwater problems in India will need to be *unconventional*, so to speak...

The clamor for *supply* and *demand* management of groundwater can be easily understood, given the preponderance of groundwater use in India. The shift, from a purely supply-driven perspective of looking at groundwater resources by all and sundry – say 20 years ago – to one considering demand management has also brought in the need for improved systems of 'groundwater governance'. The overall paradigm for groundwater governance is almost nearly well-defined, with a simply stated objective of managing demand from and supply of the resource. Broadly, groundwater governance can be understood to have components such as *augmentation (recharge)*, *energy links*, *efficiency measures (micro irrigation)*, *integration of rainwater harvesting-surface-groundwater* and *responses to groundwater quality deterioration*.

Today, the challenge in groundwater governance is not really what it includes, but how does one ground it in a country as diverse as India. Although largely agrarian still, India is in a state of rapid transition even within agriculture. The process of groundwater governance is still unclear and this paper attempts to simply put forth some critical parameters of action on the ground.

First and foremost, with groundwater resources, there is the issue of scale. India, due to its diverse geological settings, possesses almost the entire spectrum of aquifer-types present globally. The regional aquifer systems present in the Indo-Gangetic plains, to the extremely localized systems of groundwater occurrence within small Indian villages of regions underlain by different hard-rocks make the physical setting for groundwater accumulation and movement, extremely diverse. The stage of groundwater use in an area is critical too and it goes simply beyond a mass-balance formula of recharge on one side and utilization on the other. The vexing issue of scale is also important in the difference between management of groundwater in rural and urban settings. Whereas, most discussions hitherto have focused on groundwater use in rural areas, the increasing importance of groundwater management in burgeoning towns and cities would require technical and social skill-sets, not just of a different type but on an entirely different operational scale as well.

The physico-chemical status of the resource and the socio-ecology it supports undergo changes from short and long term fluxes. This rationale, therefore, demands an integration of various skills in the quest for groundwater governance models. The integration of science, technology, sociology, economics and law should play a significant role in developing models of governance – robust in what they wish to achieve and in their degree of acceptability by public. The importance of institutions has always been stressed in governance mechanisms on natural resources. Clearly, common-sense would make one believe that empowering peoples' institutions would go a long way in not just improving the management of groundwater resources, but also in structuring institutional mechanisms of governance. At the same time, given the sketchy nature of groundwater science in India, particularly from a practitioner's perspective, institutional design would also need to cater to information and data needs, social engineering and conflict-resolution as these aspects, to name of few, would be critical in putting some form of governance tools on the ground.

In many ways, the upper echelons of groundwater governance probably exist in India. Policy making, state laws and implementation are all part of a formal agenda for groundwater management. However, what is actually *happening* on the ground often has nothing to do with the formal governance structure. The biggest challenge therefore is to develop groundwater governance tools at a scale where they make a difference. In other words, groundwater governance would need to include responses that would include (list not exhaustive) the following:

- *operationalization of groundwater management agenda on a programmatic mode,*
- *aquifers mapping at the right scale,*
- *protocols of management developed on the basis of local studies,*
- *groundwater management pilots run at numerous locations,*
- *demand regulation practiced through community controls / formal & informal legislation,*
- *importance to community based management and equity,*
- *empowering people's institutions,*
- *dovetailing of finance under other programmes such as NREGA into pilots on community based groundwater management and*
- *develop / modify the estimation methodology applicable to groundwater resources.*

Finally, in the quest for governance, one can also look into other arenas. For instance, how have newer paradigms affected *commons* initiatives such as forest protection and soil-water conservation? Generally, groundwater resources have always been perceived as problematic to those who *have* access to it, whereas there is increasing reason to believe that it is also a problem of those who *do not have* access to it. The umbrella of governance, therefore, needs to be extended to rain fed farmers, and in the same breath, to rain fed areas, where groundwater management can be viewed in an entirely different context. Subsidies flow with water, except for rain fed farmers (*pers. comm., Ravindra – WASSAM*). With the focal shift on consolidating rain fed agriculture, there is a major role that groundwater can play in such consolidation and it would be a good opportunity to pilot groundwater governance under the new paradigm of rain fed farming in India!