

IATP Note # 2

Towards World Water Justice:

Some Practical Steps Towards Equitable and Sustainable Water Management

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Large sections of the civil society are opposed to the current paradigm propagated by the international water establishment. This paradigm, through its promotion of multinational led privatization and supply-oriented water management strategies in general, will further worsen the condition of water-poor peoples and of the ecosystem. In opposition to this, we call for the international adoption of principles such as 'the fundamental right to water security' for people and ecosystems; for water policies and practice that are equitable and sustainable, both locally and globally; for keeping water and water services in the public sphere, out of multilateral and bilateral trade agreements and investments.

But we are often asked: do you have any practical suggestions for dealing with the water crisis? Of course, we do!

While water availability may vary seasonally and spatially, in most parts of the world there is enough water locally, with appropriate measures, to meet the basic water needs of the people, the ecosystem needs and the local food security needs(1). Many measures are already being tried out in small communities; same times in urban areas. What is needed is more national commitment, more global institutional support and more emulation of these in other localities. Needless to say, these practical steps cannot be the same everywhere.

The need to use available water equitably, efficiently and sustainably raises five fundamental issues:

- allocation efficiency (the allocation of water between competing needs and demands)
- water use efficiency (how to accomplish a given purpose using 'reasonable' amount of water)
- demand management
- community-based water augmentation and
- institutional mechanisms to support such use

1. Allocation efficiency

Worldwide, irrigated agriculture accounts for 69% of the total water resource use. Much of this water is used consumptively, i.e. it will not be available for reuse. In many arid regions this percentage is higher. In a large number of the developing nations where access to safe drinking water and sanitation is a major problem, the percentage of water used consumptively reaches the high 90s [e.g.: Sudan (1995):

(1) Most urban center may be exceptions: Also human settlements such as those in parts of California and Israel have developed only because there are state policies which provide incentives to do so despite limited resources.

94%; Afghanistan (1991): 99%; Nepal (1994): 99%; Guyana (1992): 99%; Turkmenistan (1994): 98%! Thus **the most important issue we need to address in today's water management is that of allocation-priorities.**

Allocation priorities are basically political decisions, not technical or managerial as they are often understood to be. For example they could be prioritized as follows:

- Primacy should be given to basic water requirements for humans and ecosystems in a planning unit. The former can be attempted through a water code to guarantee a certain basic minimum (say, 50 lpcd) that is provided free of charge, if required. The code would ensure that commercialisation/ privatization does not reduce citizen's access to this minimum. The ecosystem needs of water are best managed locally and regionally through an understanding of the carrying capacity of the fresh water resources of the region. For instance, South African policy mentions a "**reserve**" for meeting peoples basic water needs and for the ecosystem.
- The second priority could be an allocation for "**reasonable domestic water use**" above the basic minimum, and for home-based production, such as kitchen-gardening.
- A third priority could be for "**reasonable local production needs**", such as family farm based agriculture, cattle-rearing, fishing, or home based production of handicrafts and pottery.
- Local policies may identify what is deemed "reasonable use/ needs" for different regions, localities and watersheds. Water may be billed at cost price for such use. After the allocation of water to meet the third priority-- local production needs---the use of water for any other purpose may be subject to a decentralized process of authorization.

Providing for a limit to use, in terms of deciding on "The Reserve" and "Water for Reasonable Use" for an area will ensure that food security interests are addressed to a great extent at local and household level.

2. Water Use Efficiency

There are at least three areas where we need to focus our attention.

- Delivery of water: The use of water in agriculture, which accounts for almost 69%, of water use, is mostly consumptive in nature. This means that water that is lost in the process of collection, storage, transfer, and application in the field is lost permanently. Any improvement in the efficiency of the above services can free up and generate new water, especially for regions with growing water demand from lifestyle changes, new developments, increase in population and increasing water resource usage.
- On farm water use: Similarly, depending on the irrigation technologies used, on-farm efficiency of water use can be increased substantially. It is common to lose around 50% of the water made available at the farm gate to unproductive purposes. Improving the on- farm efficiency especially in terms of cutting down the evapo-transpiration will both increase productivity and reduce use of water. For instance, in coastal Kutch, India, farmers traditionally have mixed cropped gardens with multi-level canopies, thereby greatly reducing evapo-transpiration.

- Third, outside agriculture, there is a need to improve the water use efficiency of domestic appliances. This is especially relevant for people who use centralized water delivery system for their domestic use.

3. Demand Management

In addition to reorganizing allocation priorities and getting 'more crop per drop,' specific measures are required to redirect the use of water "so as to equitably meet the developmental and environmental needs of the present and future generations"(2). The approach adopted till now is based on supply management. It assumes an unlimited supply of resources--whether petrol, power or water. A demand management approach in water sector could be organized around two axes.

- First, there could be measures to ensure that the use of water in some sectors or spheres are reduced. For example, while water consumption for household use in Africa average 12.4 gallons per person per day, the average water use of a US resident today is about 70 gallons per person per day (3). On the other hand, an average person in the Netherlands uses only 27 gallons per day for the same tasks. This demonstrates that there is a significant capacity to reduce consumption at household level, especially in water guzzling societies. Another area where demand management can be applied for saving water substantially is in agriculture, as demonstrated earlier. For example, even in water scarce countries or regions, many national and regional policies encourage shifting away from traditional crops (tested and proven to have drought resistance) to thirsty cash crops like cotton, sugarcane and to floraculture; Centralised water provision to large scale agriculture is subsidized encouraging indiscriminate use
- Second, there could be measures to ensure that pollution, which places a great demand on water as a pollutant carrier is minimized so as to create a greater availability of clean freshwater. Many parts of the world are likely to experience substantial deterioration in water quality by 2025 under a business as usual scenario. In most of North America and Europe, this will be a result of runoff and infiltration from non-point pollutant sources like intensive farming operations that use increasing levels of fertilizer, pesticides, herbicides, and antibiotics and produce large quantities of animal waste. All over the world, urban waste and point source pollutants like factories and industries will continue to pollute water resources. In this context, it is important that incentives and disincentives are in place at every level to ensure that the water we return to the ecosystem is of such quality that the regenerative capacity of the ecosystem is not affected.

4. Community based water augmentation

By thinking outside the framework of technological fixes (e.g., desalinization), and by looking at the ways in which many communities have survived in water scarce situations, we can utilize innovative ways to augment the supply of available water. Some examples include: rainwater harvesting in small watersheds by making contour bunds, plugs, percolation tanks, or water collection wells in arid areas of South and West Asia: roof water harvesting and storing it in underground tanks in Greece and India: and fog collection in many desert areas.

(2) Report of the United Nations Conference on Environment and Development, Annex I, Principle 3.

(3) The minimum amount of water needed for drinking, cooking, bathing, and sanitation is 13 gallons (50 liters) ... P. Gleick 2000

The possibilities for such technologies may be immense. For instance, in the Indian context, the highly respected Centre for Science and Environment has argued that if there is institutional support and financial commitment, rainwater harvesting in micro-watersheds can almost entirely meet the local food and water security needs of all Indian villages. An interesting aspect of these technologies is that most can be undertaken and managed at household or community level. This can help in increased access, ownership, and stewardship.

Colonial experiences in many parts of the world and the modernization drive of the twentieth century saw the breakdown of these systems. Many of these traditional technologies are now being revived through non- governmental and civil society initiatives. However, unless there is institutional support and incentives, these will not be undertaken more broadly.

5. Some Institutional Mechanisms

In order to ensure effective adoption of these measures globally, it will also be necessary to devise a system of incentives and disincentives, and to institutionalize these through regulatory mechanisms. Solutions devised on an incentive and disincentive basis may include: providing incentives to water users to convert to water saving gadgets or traditional drought resistant crops, for adoption of low-cost, decentralized water augmenting mechanisms and providing disincentives for the cultivation of water guzzling crops, industries, and polluting production practices like intensive farming and industrial effluents and promotion of inefficient irrigation operations.

Conclusion

Recognizing 'access to a minimum quantity of clean water' as a fundamental right or recognizing a certain amount of water as 'The Reserve' to meet basic human and ecosystem needs will be important steps towards ensuring equity and sustainability. Such a rights framework, coupled with local and national measures for water conservation, augmentation, demand management, pollution control as well as reprioritization and reallocation institutionalized through an incentive disincentive system, will help us deal with the crisis in our water resource development. The effective adoption of these can be ensured through local, regional or national regulatory mechanisms enacted to ensure that water resource development plans of the region do not threaten ecosystems or access to water to meet basic needs today and for future generations and are open to public scrutiny.

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