

World Water Day

Beyond a drop of water

Dealing with water scarcity

Recommendations of the Comprehensive Assessment of Water Management in Agriculture (CA)



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Although most of us take water for granted, it has increasingly become a scarce resource denying section of the humanity access to water for food and livelihood. In principle, water scarcity the world confronts today, has been categorized into three types; physical water scarcity, economic scarcity and institutional scarcity.

The physical water scarcity occurs when available water resources are insufficient to meet the growing demand for water, for production of food and sustenance of livelihood. The economic water scarcity arises out of inadequate investment or lack of human capacity to withdraw water from available sources. Finally, the institutional scarcity occurs when section of

the population is denied access to water resources on the ground of political and social reasons.

It is imperative that a fundamental shift of paradigms in water management should be brought about in order to deal with these three types of scarcity. At present, 1.2 billion people live in areas of physical water scarcity while around 1.6 billion people world wide live in water scarce basins where there is economic scarcity. It is also estimated that only 31 percent of Sri Lankans have access to pipe-borne water.

The Comprehensive Assessment of Water Management in Agriculture (CA), a study spearheaded by the Colombo based International Water Management Institute (IWMI), has converged a think tank of 700 scientists around the globe to

It has been estimated that seventy percent of poor in the world, approximately 800 million live in rural Africa and Asia have poor access to reliable, affordable water for food and livelihood. A research titled 'Beyond More Crop per Drop' which was co-authored by Prof. Frank Rijsberman, Director General IWMI and Nadia Mannings, a research fellow at IWMI, has pointed out that approximately seventy times of water is used for growing food than human consumption for domestic use. As much as 2000 litres of water are required to produce a kilo of rice and 11,000 litre for a single quarter pounder hamburger.

The research further stated that many rivers in arid and semi-arid regions are no longer reaching

the sea either closing the river basins or in the process of being closed.

According to AC, the demand for food would be double by 2050 with the increasing trends in food consumption. This would, invariably, increase the demand for water in agriculture triggering a widespread water scarcity. Therefore, it is imperative to explore ways and means to improve crop per drop. The rapidly growing need for water in agriculture would compel more and more withdrawals of water, modifications of flow regimes and degradation of water quality with major implications to ecosystem health.

make a critical assessment and evaluation of the benefits, costs and the impacts of the past 50 years of development. CA, a five year programme has comprehensively covered the areas of current water management challenges and the solutions developed around the world.

The findings of the research which specially focus on agricultural producers, water managers, investors, policy makers and civil society, has facilitated better investments, management decisions in water and agriculture considering their impact over the next 50 years.

In the final report of the CA, an agenda for future water management was outlined with recommendations to improve water management.

Improvement of water productivity

However, the challenges the world faces in water management are the finding water for growing cities, growing food for rising pop-

Think different about water; there is no more 'new' water for one fifth (1.2 million) of the world population in developing lands in Asia and North Africa. Their only option is to reallocate water to higher value uses. For the other 1.6 billion people, face water scarcity, constructing more water storage is a key priority.

Get water to People; Providing water for smallholding farmers in marginal or vulnerable areas through small scale technologies ranging from treadle pumps to micro-drip kits, combined with micro credit and access to markets is a proven strategy to fight poverty.

Increase water Productivity; Improvement in water productivity at farm level through smart field practices, such as conservation tilling, land levelling to improve irrigation scheduling and breeding through resistant crop varieties can make a bid different.

Look at other options for agricultural water management; There is great potential for improving crop yields by providing supplementary irrigation to rainfed systems through rainwater harvesting in farm ponds or community managed dams. (The CA report also urged the 'safe' use of marginal quality water such as brackish water and treated or partially treated wastewater which can be critical resources for improving livelihoods) In countries such as India, Pakistan and Africa, farmers use wastewater to grow cash crops.

Manage Agriculture for multiple ecosystem services; Planning water use in integrated systems for domestic use, crop growth, aquaculture, livestock and ecosystems such as wetland, offers scores for doubling or trebling water value. For example, multi-functional paddy fields can grow rice, rear fish and ducks, thereby generating livelihood for small-scale farmers while supporting biodiversity.

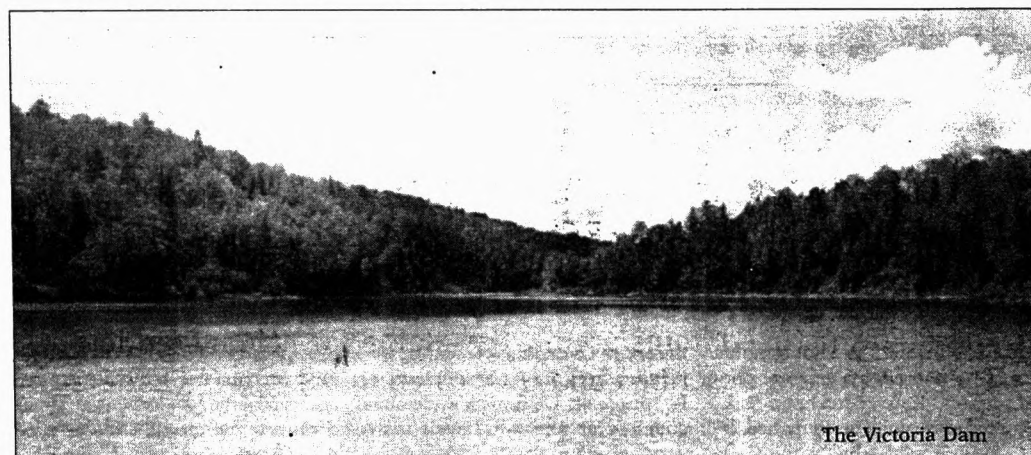
Reform the State to improve the governance of water; Government needs to enable water to be reallocated from lower to higher value users including transfers from agriculture to cities and industry. They can also provide incentives for water conservation including rewards for saving water. Water quality standards should be set and enforced and there should be a system of water (use) rights or entitlements.

Deal with trade-offs and difficult choices; A lot of hard choices have to be made often creating winners and losers. Usually the 'losers' are poor farmers, livestock herders and fishermen. What is needed here are informed negotiations where all stakeholders are brought to the table.

ulation and providing jobs for rural poor while the sustaining environment. The recommendations for increasing water productivity include enhancing the safe and productive use of wastewater, multiple use systems; single water system for domestic use, agriculture, aquaculture and livestock and also to improve water productivity through supplementary and micro-irrigation.

In the face of looming crisis, pragmatic policy decisions have to be taken by individual governments and world bodies such as UN to tackle this issue. Some kind of water rights or entitlement should be introduced to make sure that available water resources management is in a sustainable and productive manner.

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The Victoria Dam