SECTORAL TRENDS IN THE WATER SECTOR (TECHNOLOGY, POLICY AND POVERTY) IN SOUTH ASIA

By

Reba Paul
Programme Coordinator
Global water partnership South Asia
Bangladesh

ABSTRACT

In the Ministerial Declaration of the International Conference on Freshwater held in Bonn, it was recognised - " combating poverty is the main challenge for achieving equitable and sustainable development and **water** plays a vital role in relation to human health, livelihoods, economic growth as well as sustaining ecosystems". In South Asia which is the second fastest growing region in the world with an average annual growth rate of 5.3%, faces rapid urbanisation and about 40% of its population live below the International poverty line of $ 1 a day comprising about 40% of the world's poor. It is the most illiterate, most malnourished and most the least gender sensitive. The poor are vulnerable to water related problems in many ways affecting their health, productivity and physical safety. Natural disasters such as floods and droughts take lives and devastate livelihoods. Vulnerability to ill-health caused by water borne diseases or pollution is similarly a feature of life for too many poor people. Many poor communities depend on rainfed farming in areas where rainfall is variable and the green revolution including irrigation, have not reached. There are many other forms of vulnerability: erratic water supplies in low-income urban areas, declining fish stocks, limited control over waste and others. Poor access to water contributes hunger and poor food security. Women and girls have been a heavy burden in providing water for their families, and conflicts over water increases at local, regional and international levels.

Poverty reduction which is a complex issue, need specific targeted actions to ensure support to the weak and marginal communities in terms of policy, technical, institutional, environmental and financial. Many other factors also need to be taken into account for poverty reduction such as employment generation, income security, food security etc. Water is one such component of poverty reduction strategy but hitherto this has not been well articulated. There are as many aspects to water and poverty from providing infrastructure for basic services through to national and even regional policies and laws.

The modern, capital intensive technologies can not give any solution to water supply coverage to be achieved as per millennium development goals. There are many local technological solutions like hand pumps, pit latrines, compost latrines, vacutug pit latrine exhauster, small bore sewerage system, traditional rainwater harvesting and many tested and tried technologies for low cost irrigation like paals, canals, multipurpose deep tube wells, tanks, check dams, five percent pit technology, rubber dams, drip irrigation kits, rejuvenating Oaranis, integrated land and water management and low cost technologies such as three pitcher (kalshi) filter, two bucket household water treatment, shapla filter, pond sand filter for treatment of arsenic in ground water which are manageable by the local people and do not increase their vulnerability under

unsustainable practices, can improve water supply for production, reduce water related hazards and protect the ecosystems and environment on which the poor often rely for their livelihoods.

It is well established that investments in water resources management and the delivery of water services are central to poverty reduction. More investments are needed to improve water security for the poor, particularly in rural areas, and such investments should be made more effective.

Sustainable water resources development and management solutions will necessarily benefit the poor but it is not the only case. Interventions in the management of water resources or delivery of water services could further entrench inequalities and reduce already lamentable access of the poor to these resources unless they have an explicit poverty objective.

This paper will show the linkage between water, poverty and millennium development goals, discuss various water-poverty issues, policy gaps, various pro poor technologies used in the South Asia for water management, water supply and sanitation and finally draw some recommendations.

Main Extracts of the Paper

Water, Poverty and the Millennium Development Goals

Millennium Development Goal	Direct Contribution	Indirect Co
Poverty: to halve by 2015 the proportion of the world's people whose income is less than $1/day.	• Water as a factor of production in agriculture, • industry, many other types of economic activity • Investments in water infrastructure services as a • catalyst for local and regional development.	• Reduce hazards • Reduce local le • Improv increas
Hunger: to halve by 2015 the proportion of the world's people who suffer from hunger.	• Water as a direct input into irrigation for expanded grain production. • Reliable water for subsistence agriculture, home, gardens, livestock, tree crops. • Sustainable production of fish, tree crops and other foods gathered in common property resources.	• Ensure water f • Reduce grains f
Universal Primary Education : to ensure that, by 2015, children everywhere will be able to complete a full course of primary schooling.		• Improv health a especia
Gender Equality : progress towards gender equality and the empowerment of women should be demonstrated by ensuring that girls and boys have equal access to primary and secondary education.		• Commu manage women
Child Mortality: to reduce by three-fourths, between 1990 and 2015, the rate of maternal mortality.	• Improved quantities and quality of domestic water and sanitation reduce main morbidity and mortality factor for young	• Improv suscept
Maternal Mortality: to reduce by three fourths, between 1990 and 2015, the rate for children under the age of five years.	• Improved health and reduced labour burdens from water portage reduce mortality risks.	• Improv suscept
Major Diseases: to halve by 2015, halted and begun to reverse: The spread of HIV/AIDS The Scourge of Malaria The scourge of other diseases that affect humanity.	• Better water management reduces mosquito habitats and malaria incidence. • Reduced incidence of range of diseases where poor water management is a vector.	• Improv suscept that aff
Environmental Sustainability: to stop the unsustainable exploitation of natural resources and to halve, by 2015 the proportion of people who are unable to reach or to afford safe drinking water.	• Improved water management, including pollution control and sustainable levels of abstraction, key factors in maintaining ecosystems integrity. • Actions to ensure access to adequate and safe water for poor and poorly serviced communities.	• Develo manage conditi manage downst

Water-Poverty Issues in the South Asia Region based on geographical positions

Large Cities are increasingly important in both poverty and water management terms. The metropolitan and peri-urban poor face severe hardships in accessing water supplies and especially sanitation and suffer acutely from pollution and flooding hazards. Many work in the informal sector, where water supplies and waste disposal are important constraints. The urban poor often pay more for water than any other section of society and possess the assets and capability to pay and run services within their communities.

Other urban Areas, including towns and secondary cities, face even greater service and institutional constraints. Local governments are mostly weak and infrastructure is very limited. Lower densities and less industry means less pollution, but sanitation is typically almost non-existent in poor districts. Poor communities are often weak in terms of institution, technologies and assets available to them.

Coastal Zones are often very dynamic in development terms but can be extremely vulnerable to water related disasters and environmental deterioration. Conflicts between different users of water resources (often around developments such as tourism and shrimp production) are common. Resource rights are often unclear or trampled on by development pressures, which also often fail to take advantage of traditional knowledge and capabilities in areas such as fishing and mangrove management.

Floodplains and deltas are often extremely densely settled and high production agricultural areas. Water is a major determinant of productivity and floods are a constraint threat. Social (including gender) inequalities can be great and environmental deterioration (especially from land pressures) is common. The key challenge in these areas is to maximize opportunities for the poor whilst at the same time mitigating vulnerabilities and ensuring representative institutions.

Arid/Semi-arid areas are where many of the most acute problems are found. Water resources are scarce, over-exploited (both ground and surface waters) and erratic in availability, poverty is very high and both services and institutions poorly-developed. Conflicts between water users (e.g farmers and pastoralists) are becoming common as pressures grow and traditional knowledge and management systems are marginalized. This often reflects hazy rights and entitlements to water resources.

Mountainous and hilly areas are sparsely populated (often with minority communities) but very poorly developed. Institutions are weak and service provision poor to non-existent. Environmental degradation (often reflecting external pressures) is widespread in many areas and local communities are weak in terms of their assets and capabilities to arrest it.
Small Island areas have distinctive water problems, with often severe difficulties in obtaining sustainable freshwater supplies, multiple and competing uses for both fresh and coastal water resource and small populations that mitigate against economies of scale in investments.

Other rural areas vary greatly in character, but often suffer from resource pressures, institutional weaknesses and limited service provision. The efficiency of irrigation, access to water resources and services and environmental degradation are all issues in many areas.

Reviewing Policy and Governance:

Many of the water related poverty problems stem from the governance conditions through which water resources are controlled. The starting point is the legal and policy framework, which defines both the basic rights and entitlements to water resources and national priorities for their management. Governance is above all about the institutions through which water is managed: government agencies such as irrigation or public health departments, civil society institutions such as NGOs, political parties, farmers's organizations and women groups. These institutions are crucial in deciding who gets access to water resources, what investments are made in infrastructure, what technologies should be selected, how conflicts between uses are resolved, how much water costs and in many other ways. South Asia having sectoral emphasis on water resources development and management for a long period, experiencing top down decision making process with punitive laws, has been inefficient, ineffective and resistant to change over the time. There are signs in some parts of the region where changes are taking place to face the emerging trends. Process has started to change the water sector planning from top-down technocratic approach to bottom up people's participative approach at local levels. Most of the countries has scattered water laws on water resources management and some are obsolete. New water resource laws and policies integrating IWRM concept are being introduced in some countries but need effective implementation. Majority of countries have developed their vision and framework for action under the World Water Council and Global Water Partnership to reach the MDGs. Some countries have national water policies and water management plans and some have formulated those.

Overview of pro-poor water technologies and approaches in the region

- Canal and Tube-well irrigation in India and Bangladesh
- Traditional Rainwater Harvesting in many states of India like Gujarat, Madhya Pradesh, Maharashtra and Rajasthan.
- Low cost irrigation technologies used in Srilanka
- Tanks, check dams and other small structures used in India to capture runoff in river beds and wells.
- Rubber Dam Technology in hilly areas of Bangladesh for irrigation and environmental conservation.
- Low cost technologies like three pitcher (Kalshi) filter, two bucket household water treatment, shapla filter and pond sand filter in Bangladesh for mitigation of arsenic.
- Multipurpose low cost deep tubewells in Bangladesh.
- Use of pit latrines, compost latrines and Vacu tug latrine exhauster for low cost sanitation used in many parts of South Asia.
- Community cum biogas plants
- Use of small bore sewerage system for sewage and waste water management in many parts of south asia.
- Many tested and tried technologies for low cost irrigation like paals, five percent pit technology, drip irrigation kits, rejuvenating Oaranis, integrated land and water management in India and Nepal

Recommendations:

- The services provided by water resources and the infrastructure and delivery systems needed to make these services available, are fundamental to understanding the poverty-water security relationship. The management of water resources must be based on a balance between the different values that these resources have. In particular, there are key decisions to be made in priorities for investments and resource allocations over meeting basic needs for water supplies and sanitation and stimulating economic growth. These decisions need to balance the needs and interests of different stakeholders, immediate priorities against long tern goals, efficient resource and investment utilisation against maintaining ecosystems integrity and desired and appropriate technologies against capacities to afford and maintain them.

- Meeting the most basic needs of poor people can be taken as a prerequisite for taking them out of poverty. It is also often essential for sustainable water management, as poverty itself can be the root cause of many water problems. As the World Vision 21points out: " there is an immensely powerful link between human development and water, sanitation and hygiene. Practice shows that they often form an entry to human development and poverty elimination".

- Economic growth without ensuring the poor benefit does little to reduce poverty, but without growth there is nothing for the poor to benefit from. Health and education are recognised as critical factors in economic development but water less so, although no business is likely to invest in areas where water services are inadequate. The ability to harness water resources for power generation, irrigation or industrialisation has contributed to these developments. These in turn have depended upon large scale infrastructure development which bring many benefits, but which too often have also brought unacceptable financial, social and environmental costs. Huge infrastructure investments are still needed throughout the developing work, but these must be based on a very clear analysis of how this will directly contribute to poverty reduction and must conform to the highest international standards of environmental and social mitigation.

- Defining economic opportunities associated with water resources is not just a macro issue, as the management of water resources that can give the poor a chance of higher, more diverse and more secure income base: potentials such as vegetable production, milk selling, handicrafts, services, fishing and many others. Their viability depends on many factors, including access to credit, inputs and markets, having the equipment and skills needed, a local organisational base and others, including secure access to water resources.

- A pro poor approach to water management will emphasise capacity development and empowerment to ensure that required assets and capabilities are lacking and opportunities for the poor to access these assets are developed.

- Application of Integrated Water Resources Management (IWRM) concept is a necessity for sustainable management of ecosystems and water resources. Because unsustainable management of ecosystems and water resources leads to increased scarcities and vulnerabilities, further eroding the position of the poor and the integrity of the ecosystems through which the water flows.