

WORLD WATER DAY 2013

WATER COOPERATION FOR ENERGY SECURITY

March 21-22, 2013

Water plays a key role in energy security of a country due to its use in production of electricity, and mining and refining of fuel resources. Similarly, energy plays a key role in ensuring access and equitable distribution of water. It is required whenever water is extracted, moved, treated, heated, pressurized, reused, or discharged. According to certain estimates, 20-30% of total electricity consumption in urban areas is related to water use cycle. While energy availability is a critical economic growth regulator, it plays a significant role in ensuring water security. Thus, water and energy security are complementary to each other, and impact on one influences the other. Hence, different aspects related to water and energy security need to be examined critically to explore opportunities for conservation.

Distance from source, variance in rainfall patterns, population density and economics of a country act as critical regulator of energy consumption for water. India along with its South Asian neighbours has sizeable water resources; but faces huge challenge as the distribution of water varies widely by season and region. Per capita water availability in India has decreased by almost 70% since 1950, due to increasing pressure from population growth, economic development, industrialisation, urbanisation and inefficiency in water use. Furthermore, climate change aggravates the stress on water resources.

Such an increasing stress is leading to water crisis situation and has the potential for conflict in South Asia, while affecting the overall economic growth of the region through its cascading impacts on energy security. However, water cooperation has the potential to ensure water security, while contributing to the energy security in South Asia.

International Water Cooperation

Twelve major river systems drain the Indian subcontinent along with a number of smaller rivers and streams forming a total catchment area of approximately 252.8



Mha. Despite the existence of many bilateral treaties, friction over water resources in South Asia persists. India is particularly involved in international water frictions by virtue of its location and the fact that it shares borders with all other countries in the region. Trans-boundary water disputes are especially critical in South Asia as the countries are heavily populated and their economy is mainly agrarian in nature. As a result local demand for water is very high, and lack of technical competence, financial resources as well as political determination, makes it easier to demand for more water than to manage available water efficiently.

Disputes over water will further intensify as the impacts of climate change become more pronounced. In such a scenario, it is important to foster the spirit of sharing, while developing efficient water management systems as well. This will ensure water security while reducing the stress on energy grid also.

Interstate Water Cooperation

State governments in India dominate the allocation of river waters. However, as the rivers cross state boundaries, disputes are inevitable. Numerous inter-state river-water disputes have erupted since independence. The Inter-State Water Disputes Act of 1956 provisions for the establishment of tribunals to adjudicate where direct negotiations have failed between the states. However, arbitration is not binding and states have sometimes refused to accept the decisions of tribunals. Regional interests dominate the concerns of states and even the court decisions and interventions by central government have usually been unsuccessful.

Hence, constructing efficient and equitable mechanism for allocating river flows and negotiating inter-state water disputes is necessary to ensure national water security. An unambiguous and transparent framework with well-defined water rights, and institutions to facilitate and implement cooperative agreements are required to promote water cooperation.

Inter-sectoral Water Cooperation

Various sectors like Agriculture, Mining, Industry and Construction compete for water with domestic sector. Agriculture consumes the largest amount of water in comparison to other sectors. With increase in population and consequential increase in food demand, agricultural activity will increase in future, imposing further stress on



water resources. Simultaneously, economic development will lead to increase in water demand from other sectors, also.

Moreover, water is needed throughout the energy supply chain, sometimes as a direct input as in the case of hydropower or geothermal energy, as a coolant in thermal power plants or more often for the extraction and processing of energy fuels.

Hence, inter-sectoral water cooperation is necessary to harmonize the demand for water from different sectors, without adversely affecting the growth prospects of individual sectors. This will have additive benefits through synchronizing the interdependence of water and energy on each other.

The workshop on 'Water Cooperation' aims to explore the some key questions issues pertaining to water allocation and conflicts through deliberations from distinguished panellists and guests:

Question 1: How can water conflict be transformed into opportunities for water cooperation? What are some good examples of this transition? Can these models be followed, or is each situation unique?

Question 2: What should be the sharing model between the upstream and downstream states? What are the impacts at the regional level due to projects planned for water or energy security? Is there a win-win solution to water allocation and sharing arrangements?

Question 3: What should be the governance model and allocation strategies to resolve inter-sectoral competition for water? Is there a role for other mechanisms such as demand management and supply-augmentation? Must all these solutions be multi-lateral, or can states act to implement some of these initiatives in a unilateral manner?

Question 4: What are the trade offs influencing the water and energy consumption across different sectors? How can these be made mutually harmonizing? How does a joint incentive mechanism can be developed that may encourage both the water and energy conservation, simultaneously?

