Effective Management of Transboundary Rivers for Sustainable Development
Case Study: the Nile Basin

Right to Water

Water shortage is likely the most dominant water-related problem of the present century and jeopardizes sustainable development in many places around the world. More than a billion people in the developing world, mostly in Africa, lack safe drinking water – an amenity taken for granted in developed world. Moreover, nearly 3 billion people live without access to sanitation. The failure of nations to satisfy these basic human needs has led to substantial unnecessary and preventable human suffering.

Major Water Problems in Africa

Water scarcity is a major problem in Africa. It occurs mainly due to the uneven distribution of freshwater resources. A compounding factor is the unprecedented population explosion.
One of the major problems associated with water in Africa is its quality, due to uncontrolled domestic and industrial pollution of drinking water resources. Most African countries lack an adequate and efficient management system for their water resources.
As available water resources are limited, transboundary rivers can be a source of cooperation or a cause of conflicts. Scientists can play a major role in reducing such tensions by defining effective mechanisms for the sharing of water resources.

Nile River Basin

'Nile' is derived from the Greek word 'neilos', which means 'river'. The Nile was essential for the development of the ancient Egyptian civilization, which relied on agriculture for its wealth and power.
At 6,853km long, the River Nile is the longest river in the world. It flows from sources in east Africa to the Nile delta in north Africa, discharging an average of approximately 300 million cubic metres of water per day into the Mediterranean Sea. The Nile has two major branches: the White Nile, which originates in east-central Africa, and the Blue Nile, which originates in Ethiopia. The two major sources of the river are Lake Victoria, which feeds the White Nile, and Lake Tana, which feeds the Blue Nile. The two branches join at Khartoum in Sudan.
The Nile basin comprises eleven countries: Burundi, DR Congo, Egypt, Eritrea, Ethiopia, Kenya, Rwanda, Sudan, South Sudan Tanzania and Uganda. Apart from Egypt and Sudan, most of the Nile basin countries are not effectively using the river and a large part of the water is wasted due to the high evaporation rate in South Sudan and Sudan.

Challenges/Implications

Water scarcity and increased drought frequency are increasing in most of the Nile basin countries. In 1960, water share in Egypt was 2000 cubic metres/person/year. Currently it is around 700 cubic metres/person/year. More areas in the Nile basin are expected to enter water stress and water scarcity zones by 2025. The water problem leads to insufficient agricultural products and food insecurity.
There is not only a problem of water, but also of energy. Some regions in many countries in the basin lack electricity. For example, only 9% of the population of Uganda has access to

electricity. As a consequence, each country on the River Nile wants to build dams wherever possible. Kenya, for example, wants to build 24 dams on the Nile within 10 years.
Is building dams a good solution? Will it put the area into conflict?

Building Dams: Pros and cons

Building dams would provide electrical energy and water for irrigation and drinking. It will also ameliorate land degradation during floods.
However, it may lead to increased water evaporation and will cause displacement of people and livestock. Dams also have its impact on ecosystems, biodiversity and climate change (e.g. by disrupting the natural flooding cycle). In addition to the high cost of construction, dams obstruct the river and prevent transport across it.

Roles of the Scientific Community

Scientists, with their profound expertise, are capable of in-depth analyses of the problems. They can provide scientific and technical inputs, and recommend effective tools to solve the problems. They can also participate in raising public awareness of the problem and the possible solutions, which is an important component in such potential regional conflicts.
In view of the complexity of the problem, it is recommended that a technical group from the science academies from the affected countries should come together to analyse and define parameters for the stakeholders to work on.
May be a good start would be to organize a joint conference/workshop of scientists from Nile basin countries to discuss and identify key issues and mechanisms of cooperation, and to draft joint research projects for coming years, etc.

Roles of the Diplomatic Community

The diplomatic community should work to bring all the stakeholders together to address the problems based on the technical data provided by the scientists.
Setting up a commission for fair and equitable management of the river is an essential step. This should be accompanied by the definition of a legal framework for operational protocols.

Water management schemes must promote equitable use for current and future users, increase access, share benefits, and encourage broad participation.

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These authors comprised one of the breakout groups of the AAAS-TWAS Short Course in Science Diplomacy, held in Trieste, Italy, from 8-13 June 2014. This paper is a summary of discussions that occurred within the group.

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