

SPECIAL SECTION WATER AND INTERGOVERNMENTAL RELATIONS

Managing water resources in five federations

“THERE IS ENOUGH WATER FOR EVERYONE. THE PROBLEM WE FACE today is largely one of governance: equitably sharing this water while ensuring the sustainability of Natural ecosystems.”

These upbeat words come from the United Nations’ 2006 World Water Development Report.

But elsewhere in the UN’s statistics, we are told that 1.1 billion people lack access to clean drinking water. Other UN water deprivation statistics are equally disturbing.

So, the world is facing a water crisis, but a crisis that can be attenuated by better sharing and managing this vital resource.

This issue of *Federations* magazine focuses on how five federations manage their water resources, how the intergovernmental machinery operates in Australia, Ethiopia, India, Spain and the United States to ensure that the central governments and the subnational units exercise their authority in ways that protect the interests of the country as a whole and those of the constituent units.

A common thread in these articles is that parts of all five countries currently face periodic water shortages or expect to soon be contending with alarmingly insufficient supply.

In Australia, where the constitution assigns authority over



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The Blue Nile Falls are a waterfall on the Blue Nile river in Ethiopia. Known as “water and smoke,” they are situated about 30 kilometers downstream from Lake Tana, the source of the Blue Nile.

various aspects of water to the two orders of government, we learn that the federal government and the states recently came to a landmark agreement that enables the central authority to manage the water resources in an area the size of France and Germany, and potentially rescue the country's food basket, known as the Murray-Darling Basin.

Ethiopia, a young federation, is hit with cyclical droughts and famines because it cannot capture and store its rainwater. The legal framework and the infrastructure is coming into place however for the central government and the states to better share responsibility over its waterways, and to extract greater benefit from the Blue Nile, before its waters flow to Egypt.

In India, where Gandhi skimmed on water while bathing in the Sabarmati River almost 90 years ago, 15 of India's 28 states have had internal water disputes or are squabbling over water projects. One main reason for the disputes is the

doctrine that states "what falls on our roof is ours to use, without regard to any potential harm to downstream parties."

Spain, we are told, is facing increasing water scarcity due to climate change and irresponsible use of the resource. In an example of classic subsidiarity, Spanish style, authority over its water has shifted from the centre to the autonomous communities and even to municipal authorities.

The United States follows an opposing path. There, when there is a federal-state conflict over the management of water resources, the federal law prevails. This is because the so-called Supremacy Clause of the Constitution which makes federal law supreme and trumps any notion of state primacy.

Ethiopia's famines to decline with enhanced water management

BY ROD MACDONELL

AS THE RAVAGES OF FAMINE PLAGUE THE EASTERN AND southern regions of Ethiopia, the country's vulnerability to wildly fluctuating rainfall levels cries out for the implementation of long-term water management solutions in this nation on the eastern tip of Africa – called the horn of Africa.

Famines in 1973 and 1984 claimed the lives of about 1.3 million in Africa's second most populous nation of 77 million. The current blight is not expected to result in large-scale loss of life, due to the efforts of the Ethiopian government and international donors.

However, it represents a massive setback for Ethiopia's poor, with 6.4 million people newly dependent on food assistance in addition to the 7.3 million Ethiopians that normally rely on food relief programs.

The current drought, which is also affecting the state of

Tigray, is caused by the failure of the "short season rains" between March and May 2008.

It is cyclical for Ethiopia, states a 2006 study by the World Bank: "Droughts and floods are endemic, with significant events every 3 to 5 years. Droughts destroy watersheds, farmlands and pastures, contributing to land degradation and causing crops to fail and livestock to perish."

According to the World Bank paper, titled Ethiopia: Managing Water Resources to Maximize Sustainable Growth, rain-dependent agriculture employs 85 per cent of the population and accounts for 40-45 per cent of the country's gross domestic product and most of its exports. Ethiopia also generates 90 per cent of its electricity from hydropower, which results in power shortages when reservoirs run low during severe droughts.

Ethiopia is the only African nation to not have been colonized. It is among the world's poorest nations with about 40 per cent of the population living in poverty, according to the World

This article is drawn in part on a paper by **Mr. Imeru Tamrat**, an Ethiopian lawyer and legal expert in the field of water management in Ethiopia. The paper was presented at the International Conference on Water Management in Federal Countries held in Zaragoza, Spain, on July 7-9, 2008. **Rod Macdonell** is senior editor of Federations magazine. In 1999 and 2000 he trained Ethiopian journalists in Investigative Journalism.

Bank's 2008 country assistance strategy for Ethiopia.

Ethiopia is a young federation. It is still feeling its way around the contours of federalism after voters accepted its federal constitution in 1995. Prior to that it had been ruled by a brutal socialist military dictatorship, which had toppled Emperor Haile Selassie in 1974.

It faces numerous development challenges and water management is near the top of the list.

In addition, recent strong economic growth—which increased demand for food—combined with high international food and fuel prices, have the country reeling. In September 2008, food prices in Ethiopia had risen by a staggering 81 per cent over the previous 12 months.

But it is not all bad news for Ethiopia. Over the last five years, annual economic growth was as high as 13 per cent and did not fall below eight per cent. However, the Bank study highlights the country's precarious water supply and suggests its "variability costs the economy more than one-third of its growth potential." In other words, reducing this volatility must be an economic priority.



REUTERS/ANTONYMILUGMA

Sudanese villagers travel by boat on the river Nile in Sudan's capital, Khartoum. The Blue Nile, whose source is in Ethiopia, joins with the White Nile near Khartoum. The World Bank and international donors are to lend and contribute US\$3 billion to assist 10 countries bordering the Nile develop water projects along the world's longest river.

Capturing the water

Ethiopia has water. Its renewable surface water resources from 12 river basins and lakes provide an estimated 122 billion cubic metres of fresh water. The problem is that the resource is highly variable both in time and space, and the country lacks the

Forcefully flows the Nile: downstream

BY TAMRAT G. GIORGIS

THE NILE RIVER, AFRICA'S WATER TOWER AND LONGEST IN THE world, is a source of ongoing tension between Ethiopia - the source of this historic waterway - and Egypt, the primary beneficiary of this biblical wonder.

The Nile is so precious to Egypt, with 95 per cent of its people living along or near its banks, that former Egyptian president Anwar Sadat once threatened war if Ethiopia interfered with the Blue Nile - the branch of the Nile that originates in Ethiopia and flows through Sudan and Egypt to the Mediterranean Sea. (The other main branch of the Nile, the White Nile, originates in Lake Victoria - a lake shared by Tanzania, Kenya and Uganda.)

For Ethiopia, said water expert Imeru Tamrat, "admit-

tedly, most of our water resources are in the Nile Basin." Indeed, about 85 per cent of the natural flow of the Nile River at Aswan in Egypt originates in Ethiopia.

"The Nile continues to be the main focus of public discourse, including the media and government," Tamrat said in an interview. He once served as a lead negotiator for Ethiopia on the Nile.

Egypt, where 98 per cent of its land is covered by desert, has 64 million of its people living on four per cent of its land. A study commissioned by the United States Agency for International Development predicts that Egypt will experience a 16 to 30 per cent water deficit by the end of this century.

This explains Egypt's declaration that the Nile's water is a "vital priority of national security."

In many federations, much of the onus on water management is on the subnational while the central government's change to work out how to best manage the trans-regional rivers and lakes within the federation.

But for Ethiopia, the trans-border dimension is a challenge of equal and perhaps greater magnitude.

Other than a 1959 treaty which allocates all the water to



CREATIVE COMMONS

A young Ethiopian fishes on the banks of the Blue Nile. In most federations, the main challenge in water management is for the various orders of government to agree on sharing responsibilities. But for the Nile, Ethiopia must deal with eight other countries, Burundi, Democratic Republic of Congo, Egypt, Kenya, Rwanda, Sudan, Tanzania and Uganda in an organization called the Nile Basin Initiative

financial resources to build the necessary dams and reservoirs to draw upon during times of shortage.

The Bank's prescription for Ethiopia to achieve water security is multi-pronged: to spend on infrastructure, on key elements such as dams and irrigation; to develop human capacity to manage its water resources; and to set up effective

administration and management of the utilization of waters that are inter-regional and trans-boundary in nature while regional states have jurisdiction over the water resources within their respective borders, in accordance with federal laws.

CONTINUED ON PAGE 32

two countries, Egypt getting 55.5 billion cubic metres of water annually and 18.5 billion cubic metres going to Sudan – there is no formal water-sharing agreement between the 10 countries in the Nile River Basin.

“Many countries on the basin share our views on how to utilize the Nile water,” Prime Minister Meles Zenawi of Ethiopia said at a convention of the ruling EPRDF party in September.

“There are differences with Egypt, though, which I believe are a matter of negotiations.”

But serious efforts, which show great promise, have been deployed by all Nile Basin countries to get on side. The 10 Nile countries have been working since 1999 on what is known as the Nile Basin Initiative (NBI).

The initiative serves as a platform to help countries along the basin transform their relationships from confrontation to co-operation, thereby building mutual trust and confidence through executing joint projects; and will continue until such time that there is a comprehensive deal signed on sharing the Nile water.

The World Bank is managing a multi-donor trust fund to finance the first phase of investment projects under the NBI,

the costs of which have been estimated at \$3 billion.

In fact, the first investments are already in progress, including irrigation projects in Ethiopia and Egypt, an integrated water resources development project for the Tana and Beles basin in Ethiopia, and the connection of the national electricity grids of Ethiopia and Sudan, in order for Ethiopia to sell surplus hydro power to its neighbour.

Tamrat said the Nile initiative has a clear goal. “The basic objective of the Initiative is not to allocate the volumetric of the water.”

“It is to share the benefit of the resources. There will be a joint irrigation system. Food production can be shared by both. Watershed management and environmental issues are also included in the initiative.”

His prime minister sums it up succinctly: the initiative is not an agreement on water sharing in itself; but this is a possibility further down the road.

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ETHIOPIA [FROM PAGE 11]

The government has adopted the river basin as a planning unit to develop and manage the country's water resources, a step which is in line with the Ethiopian Water Resources Management Policy.

Most of the major powers and responsibilities of the Federal Ministry of Water Resources are to be gradually allocated to River Basin Organizations (RBOs) as they are established.

States take a role

Ethiopia's federal system recognizes the importance of decentralized management by regional states in the political, economic and social affairs of the country. Moreover, the federal government cannot effectively discharge some of its responsibilities unless it adopts a decentralized and participatory approach to their management.

This calls for the regional states to have an adequate role and participate in decision-making regarding the management of water resources within their respective regions.

Ethiopian water expert Imeru Tamrat explains that the regional states do in fact participate in decision-making on water resources management. They prepare and implement their own water resources investment plans and projects.

In fact, they also issue permits to water users even though it is the federal government, and now the Basin authorities, that are legally mandated to issue permits.

But Tamrat says "one of the problems with the intergovernmental machinery in water resource management is the weak link between the federal government and regional states with regard to water resource management."

"For instance, the water sector in the regional states is only obliged to report its activities to the regional government and not to the Ministry of Water Resources (MoWR) at the Federal level," says Tamrat

The MoWR therefore does not have much leverage on the regional states though it does have financial leverage as most funds for investment in the water sector - particularly medium and large scale irrigation schemes and hydro power - comes from the federal coffers.

There is also a very weak interaction horizontally among the regional states

themselves in water resource management, says Tamrat.

Regional states sharing river basins in Ethiopia do not have any mechanism such as the Canadian inter-governmental basin agreements to consult and co-ordinate their activities with respect to water resources management.

Tamrat believes that those RBOs yet to be established are designed to effectively create such co-ordination and that the respective river basins in Ethiopia are managed in an integrated manner in the future.

It will therefore be necessary to clearly define the degree to which decentralization of federal powers over water management is to be devolved to the states and to water resources management bodies such as the river basin authorities to ensure effective management of the country's water resources.

The powers the federal government will delegate to the states are expected to be defined in laws developed by the executive arm of the federal government responsible for water resources.

So, as the government is planning and setting up its water-management institutions, it has a long-term structural deficiency to deal with.

The availability of water is not well aligned with where people live.

For instance, about 32 million people live near 90 per cent of the country's water resources contained in four river basins including the Blue Nile. At the same time, almost 50 million people depend on only about 10 per cent of the country's water resources.

Rainfall in Ethiopia is highly variable in terms of where it falls and when. The highest mean annual rainfall, more than 2,700 mm, falls in the southwestern highlands of the country and gradually decreases in the north to less than 200 mm, northeast to less than 100 mm and southeast to less than 200 mm.

Moreover, most of the major river basins of Ethiopia cut across more than one regional state or are trans-boundary in nature. Ethiopia is upstream of all its trans-boundary rivers with more than 75% of the water resources flowing into neighbouring countries. This in itself is a major constraint on water resource development since Ethiopia is bound by treaties to negotiate with the downstream countries regarding the sharing

and management of the waters of such trans-boundary rivers. (*See sidebar Forcefully flows the Nile on page 10.*)

Drinking water scarce

Only a minority of Ethiopians - 42 per cent - have access to potable water services and some 11 per cent have access to improved sanitation. Urban areas have the highest coverage, where about 83 per cent of the population has access to improved water supply and 55 per cent to improved sanitation facilities. The estimated irrigation potential in Ethiopia is 3.7 million hectares. However, less than 5 per cent (approximately 200,000 hectares) are currently under irrigation.

The Blue Nile Basin was selected as a priority for the establishment of a River Basin Authority. It has the greatest runoff (52 billion cubic metres) and is shared by three regional states. There are also several water resources development projects currently under construction and planned within the basin.

These factors lead to competition and pressures over water resources in the basin both in quantitative and qualitative terms. They show the need for integrated planning for water resource development with the states sharing the basin actively involved in all aspects of decision-making. In short, river basin management in Ethiopia will require more attention to intergovernmental relations than hitherto.

Moreover, the Blue Nile River is the major contributor to the entire Nile Basin flowing westward toward Sudan and Egypt downstream. In 1999, the Nile Basin countries established a co-operative framework under the auspices of the Nile Basin Initiative.

But despite Ethiopia's improving economic performance of late, it has nowhere near the wealth to provide quick fix solutions to attain long-term water security. For it to achieve South Africa's level of water security, for instance, the World Bank estimated Ethiopia would need to spend four times its GDP of \$35 billion plus a lot more on institutions and capacity building.

"This ... only serves to demonstrate that strategies focused purely on water management and infrastructure responses are not affordable," Tamrat concludes. 