GEF Global Action on Water

GLOBAL ENVIRONMENT FACILITY

# TARGETING WATER SCARCITY

Scarcity is the central issue of the global water crisis. Whether caused by sparse or degraded supplies, a lack of sufficient freshwater resources will become the main limiting factor in human development within a single generation, unless there is a significant change in current trends. The number of people experiencing water shortages and stress is projected to rise to 2.5 billion, representing more than a quarter of humanity. Africa is at particular risk, but the threats are global, linked to population growth, climate change, irrigation methods, and land and water management.

Helping ensure that the world takes action on needed policy reforms and makes sufficient investments today to increase and stretch current water supplies, improve irrigation efficiency, and manage competing demands in a sustainable manner are major objectives of GEF's international waters projects.

Two projects—from South America and Central Africa—illustrate the range of GEF-funded activities addressing scarcity.

## ON THE GROUND IN LATIN AMERICA: THE SÃO FRANCISCO RIVER BASIN

Brazil's Rio São Francisco traverses diverse climatic zones and five states in northwestern Brazil before discharging into the Atlantic Ocean. The basin is as large as the Danube or the Colorado Rivers and faces similarly complex water problems as a result of haphazard development projects in the mining, irrigation, hydropower, and urban water supply sectors. These projects did not take environmental considerations into account, resulting in adverse impacts on coastal areas, biodiversity, and the future development potential of this water-scarce, semi-arid region.

As the scale of the problems in the region became known, Brazil requested GEF assistance to develop a watershed management program that addresses the root causes of degradation and scarcity in the basin. The project, *Integrated Management of Land-based Activities in the São Francisco Basin*, is utilizing $4.8 million in grants from the GEF along with more than $17 million in cofinancing from the Government of Brazil, the World Bank, and the Organization of American States (OAS).

The project is helping the government to implement its new national water law in the basin, including a system of pricing for water use. It is also working to implement other policy reforms that achieve more efficient water use and improve environmental quality in the degraded coastal area as part of the Global Program of Action for the Protection of the Marine Environment from Land-based Activities.

In addition, the project is:

- Working to establish a quantitative basis for the fiscal and legal mechanisms needed under the new law to sustainably manage the river and its coastal zone, including a framework for the allocation of water rights and the development of water prices and use regulations.
- Helping form a river basin committee representing stakeholders in the five basin states. In

addition, a framework is being developed for a financially sustainable basin management agency to facilitate integrated land and water management strategies that incorporate the ecological needs of the basin and coastal zone. Complementing this will be a program of legislative initiatives to harmonize and optimize water resource management and protection among the five different states in the basin.

- Preparing analyses of the use of artificial floods and different scenarios for hydropower and irrigation operation of the series of reservoirs in the basin to minimize estuarine and coastal zone degradation.

Of great interest for replication elsewhere will be the experience gained from the use of financial and legal mechanisms for the management of both water quantity and quality. These mechanisms may have broad application to other situations around the world where quality and quantity considerations need simultaneous attention as countries address the water crisis in a holistic manner.

## ADDRESSING THE CHALLENGES OF LAKE CHAD

In the Lake Chad Basin of Central Africa, effective management of land and water resources in the drylands is central to sustaining the lives and livelihoods of people in five nations: Cameroon, Central African Republic, Chad, Niger, and Nigeria. The basin is experiencing progressive degradation as human demand for natural resources in the basin—principally land and water—increases. A mosaic of communities rely upon these resources to sustain domestic, industrial, agricultural, fishing, and pastoral activities—often at subsistence levels. By the year 2020, the population that depends on the lake and its resources is projected to reach 35 million, a 75 percent increase from current levels.

The GEF project, *Reversal of Land and Water Degradation Trends in the Lake Chad Basin Ecosystem*, is working to make sustainable development of the region and its resources a reality. A total of $10.3 million in GEF funding is being combined with $3.1 million in cofinancing—more than half of it from the affected countries themselves—to help lay the groundwork for a system of basin governance in which the countries collectively agree on appropriate measures to manage Lake Chad's resources. This effort complements ongoing GEF activities in West Africa, including projects in the Niger River Basin and the Senegal River Basin.

The first stage of this project will focus on lowering barriers to collaborative management among the five nations; completing a thorough analysis of the environmental and social challenges affecting the basin; reaching agreement on transboundary priorities; and preparing a long-term strategic action program to address priority issues. A second stage will facilitate full-scale implementation of the strategic action program, including country-by-country projects to ensure sustainable development and use of the basin's resources.

An important feature of this project is a series of demonstration activities on a subbasin level for improving integrated management of land, water, and ecological resources. Conjunctive management of surface and groundwater resources will be explored, activities to stem the tide of desertification will be supported, and artificial floods will be tested downstream of dams to restore ecologically important flood flows that benefit floodplain agriculture.

## FOR MORE INFORMATION

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