

SECURING WATER FOR THE ENVIRONMENT IN THE MARA RIVER OF LAKE VICTORIA CATCHMENT, KENYA AND TANZANIA

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EXTENDED ABSTRACT

The Mara River basin encompasses some of the world’s most unique ecosystems and human communities, tightly linked by their dependence on water from the Mara River. From its headwaters in Kenya, the Mara River flows through a mosaic of forests, tea fields, and croplands before entering Maasai pastoral lands. In this semi-arid landscape, human demands for water – especially for livestock and agriculture – run high and surface flows of the Mara River system are essential to meeting demands.

Downstream of these burgeoning human communities lay two of the world’s most important wildlife refuges, the Masai Mara National Reserve and the Serengeti National Park. Together these protected areas host nature’s largest annual migration of land animals, when more than two million wildebeest, zebra, gazelle, and other animals migrate to the Mara River each dry season. The Mara River is the only perennial source of water for these animals. Both they and the river’s aquatic organisms are dependent on the quantity and quality of its flows.

Water demands further downstream continue to be high where the river feeds into the Mosirori wetlands and Lake Victoria. The lake and its adjoining wetlands have long been recognized among the world’s most bio-diverse freshwater systems. Hundreds of fish species inhabit the lake and wetlands at the mouth of the Mara River, and fisheries

provide a primary source of income for the thousands of people living along the wetlands and Lake Victoria coast.

Meeting human water needs while minimizing adverse effects on ecosystems and wildlife is a fundamental tenet of Integrated Water Resources Management (IWRM), and the specification of environmental flow allocations (EFAs) is a widely recognized mechanism to ensure minimal ecosystem water needs are met. Protection of EFAs is mandated in the Kenyan Water Act of 2002 and the Tanzanian National Water Policy of 2002, and more detailed rules and strategies for implementation have since been drafted in each country. Responsibility for determining and enforcing EFAs is assigned to the Kenyan and Tanzanian ministries of water.

With these political and institutional enabling conditions in place, the Global Water for Sustainability (GLOWS) Program, with financial assistance from USAID East Africa, is supporting the efforts of the Ministry of Water and Irrigation (Kenya) and the Ministry of Water (Tanzania) to implement the new rules and strategies for water resources management, including the specification of EFAs for the Mara River.

GLOWS is facilitating and coordinating a full-scale environmental flow assessment in the Mara River Basin in close collaboration with the local water offices. Presently there are more than 200 methodologies used worldwide for estimating environmental flow needs. The GLOWS Project has elected to apply the Building Block Methodology (BBM), which was developed in South Africa during the 1990s and has been widely utilized.

The BBM is carried out over a period of eight to twelve months by a team of experts representing the disciplines of hydraulic engineering, geomorphology, hydrology, aquatic ecology, riparian ecology, water quality, and social science. The assessment was launched with a five-day training course in May, 2006. Three sites were selected for detailed studies and field visits were made during March and July of 2007. The experts reconvened in October of 2007 to discuss the findings of each specialist and to reach consensus among the experts on the required environmental flows. A coordinator oversaw the entire assessment and facilitated the individual actions of the experts. Representatives from the water offices and other local authorities are also participated in the effort.

The assessment is emphasized the environmental flow needs of the Masai Mara National Reserve and the Serengeti National Park during the dry season. This includes meeting the drinking water needs of the millions of migrating ungulates and other animals as well as providing for the critical aquatic habitat needs of hippos, crocodiles, fish, and for riparian vegetation. These efforts were made more urgent by the intense drought the Mara River basin experienced during late 2005 and early 2006, when the river fell to its lowest levels in many years. The impacts on humans, livestock, and wildlife were severe, and as a consequence local stakeholders and institutions are acutely aware of the importance of quantifying and protecting the highest priority flows for basic human needs and the environment.

It is not enough to make recommendations of flows for the environment. Environmental flow allocations must become binding and be enforced. GLOWS is continuing to support the water offices in both Kenya and Tanzania to implement the EFA recommendations.