Between May 2009 and September 2010, the Hydrology Expert Facility (HEF) provided support to the project team implementing the $69.85 million Tana and Beles Integrated Water Resources Development Project (TBIWRDP; see box). The project is focused on improving the management of water resources in the Tana and Beles sub-basins of Ethiopia. Its aim is to help solve issues that are hampering sustainable development in the area, such as inadequate institutional capacity; a policy framework that hinders the coordination of sub-basin planning, development, and management; and lack of technical expertise in lake and watershed management.

HEF support has yielded concrete results in several key areas of the project:

- Increased community participation in the watershed management subcomponent led to the establishment of 80 additional community committees (for a total of 86 committees) that are currently actively participating in planning for their watershed. This increase in community participation was the direct result of the work of 21 community facilitators.
- The Project Coordination Unit has successfully planned the design of a Basin Information System (BIS) covering all water-related topics. The Minister of Water Resources is now considering expanding it to other river basins.
- Appropriate lake management planning has been integrated into sub-basin water resource planning and management activities, including the involved communities in the decision-making and planning process.
- Information systems and watershed and lake management have been integrated into one institutional framework to manage the Abbay River Basin Authority (ARBA) and its branch offices for the Tana and Beles sub-basins.
- The government of Ethiopia has adopted fully the institutional framework that was developed with HEF support. The 165 required staff positions that were identified will become part of the civil service structure.

The overall thrust of HEF support to the TBIWRDP has been to include the involved communities in the decision-making and planning process through a communication and consultation strategy. Communities and local research institutions are organized in river basin organizations that are also involved in monitoring lake water quality. The Water (basin) Information System, which is currently being implemented, will be operated and managed by these river basin organizations.

The TBIWRDP team has requested additional HEF support to build on this success. In addition, the government of Ethiopia has indicated its desire to expand some of the activities to other river basins.

1 HEF support was provided through four assignments totaling about USD 96,000.
2 The Water Expert Team (WET), into which HEF merged as of Jan. 2011, will provide additional support (approx. USD 25,000).
HEF Support to Address Key Constraints in TBIWRDP

The Tana and Beles project aims to support the government in finding solutions to the problems that hamper sustainable development in the region, including inadequate institutional capacity and lack of technical expertise in lake and watershed management. In particular, additional assistance is needed to bring in new knowledge, experiences, and innovative approaches (in line with international best practices), as well as bring knowledge to the community level and assist with the initial implementation of the project. In order to address these issues, HEF was asked to focus its support on four areas: watershed management, hydrological information systems, lake management, and institutional improvement.

Watershed Management: This component included a broad range of issues with immediate and critical impacts for affected communities, ranging from sustainable agricultural practices to rules for managing forests. However, local communities were not involved in the planning and implementation of watershed management activities. The TBIWRDP team requested that HEF assist by working with the Bureau of Agriculture and Rural Development (BoARD) of the Amhara region to review the implementation of watershed management programs. HEF helped to assess the component’s technical content, and reviewed implementation, monitoring, and evaluation plans.

With HEF support, watershed development (the TBIWRDP’s largest activity) has become the project’s best performing area. The active involvement of the Hydrology Expert Facility has helped to boost both government and community interest in the project. One of the Facility’s key contributions was to help introduce the concept of community facilitators (CFs). CFs are trained professionals who live and work in the community and teach its members the skills they need to engage in soil and water conservation activities. By living in the communities for extended periods, the CFs can mobilize community members and make them sensitive to the needs of their watershed, as well as advise them on how best to organize to bring about change. By the end of 2010, twenty-one CFs had been hired, and each one supported work in several micro–watersheds. Community feedback was extremely positive.

HEF also helped to identify the need for better training at the community level to make informed decisions about managing watersheds. Training women is especially important because they perform most of the agricultural work in these communities. Following HEF suggestions, a training program was introduced in the fall of 2009. Before the HEF became involved, Community Micro-watershed Committees (CWCs) existed in only 6 micro-watersheds. By late 2010, with encouragement from the CFs and the introduction of training programs, 86 communities had CWCs in place and were actively participating in planning for their watershed. The success of these innovative features not only increased community awareness of conservation issues, but also encouraged regional project staff to introduce them in other areas.

Hydrological Information Systems: HEF support was requested to facilitate the establishment of the project’s Water Resources Information Systems Development sub-component. With HEF support, the Project Coordination Unit has successfully planned the design for a Basin Information System (BIS) covering all water-related topics to provide an organized data and information base for dissemination to all users. The BIS includes an upgraded hydrological system (HIS) for the entire Abay Basin (not only

3 Community contribution has been significantly higher than envisioned and the capacity created in the implementation team ensures the sustainability of project implementation and support to be given to these activities by the Government of Ethiopia after project completion.
the Tana and Beles sub-basins). The HIS will gather data on real-time rainfall, groundwater and surface water quality, and aquatic biodiversity. HEF assisted the unit in drafting detailed terms of reference for hiring a consultant to design and implement this system (work is expected to begin shortly). Given its potential, the Minister of Water Resources is now considering expanding the BIS to other river basins. The government also has plans to incorporate BIS into the Program for Accelerated and Sustained Development to End Poverty (PASDAP), a program that is used extensively by the World Bank’s Country Assistance Strategy (CAS) in formulating support programs.

While reviewing the needs of the BIS system, HEF also helped to identify several gaps in the knowledge base that impede informed decision-making about the watersheds. These gaps included the lack of a bathymetric survey of Lake Tana, and adequate characterization of the groundwater resources of the Tana-Beles Sub-basin. The groundwater study began in March 2010 and the bathymetric survey is nearing completion. Establishment of a weather-monitoring radar system in the area (that will serve as a pilot project for a larger network of radar systems) is in the final stages of project planning and is being carried out in collaboration with Bahir Dar University.

Lake Management: HEF supported the integration of appropriate lake management planning into sub-basin water resource planning and management. The first step was to assess the management of Lake Tana in the context of lake management throughout Ethiopia. Key areas of concern for Lake Tana were identified and addressed as a result of this study, including water balance and use impacts on navigation, tourism and fisheries, regulation of fisheries, watershed degradation and sedimentation, eutrophication, lake water quality, and wetlands and biodiversity. HEF support was also sought in the design of a bio-chemical monitoring program for Lake Tana that will be undertaken by the Tana Sub-basin Organization in coordination with Bahir Dar University (which will provide training, analysis, and outreach).

HEF support has been critical in advancing plans for the management of Lake Tana. Several issues were identified, including low water levels, overfishing, local blooms of blue-green algae, and use of the lake as a sink for pollutants. Potential problems for the lake were pinpointed, including eutrophication, contaminants in fish, and decreases in biodiversity, which could be exacerbated by planned construction of dams, large commercial farms, and industrial projects in the area. Drawing on successful examples from similar lakes around the world, HEF assisted the interim Tana Sub-basin Organization (TaSBO) to draw up a detailed plan for responding to these concerns. The lake monitoring plan, which was designed to support sustainable development in the basin, contained many concrete solutions, such as proposals for legislation that would preserve almost all shoreline wetlands. The plan also stressed the importance of more formal cooperation between federal and local agencies to help manage Lake Tana. Based on this plan, TaSBO staff began water monitoring activities in May 2010, just prior to the opening of the Tana-Beles hydropower plant. The timing of the start of the monitoring was critical because the initial data will provide a baseline to evaluate the effect of the plant on the lake system.

Institutional Development: The objective of HEF support for institutional development was to review the status of the establishment of the Abbay Basin and the Tana and Beles sub-basin organizations, and provide a realistic time-bound framework for their operationalization. The project is expected to help develop enabling institutions for integrated planning, management, and development in these sub-basins, and accelerate sustain-
The overall thrust of HEF support to the TBIRDP has been the inclusion of the involved communities in the decision-making and planning process.

able growth. The HEF was asked to offer recommendations for building an appropriate knowledge base, analytical capacity, and structured stakeholder consultation program that would facilitate the development of a shared vision for the sub-basins.

After an extensive analysis of the responsibilities of the basin and sub-basin organizations, HEF helped to develop a conceptual framework for an institutional structure that would allow the basin and sub-basin organizations to work together to accomplish the integrated water resource management that will be critical to the project's success. The framework has laid the foundation for future sub-basin organizations in Ethiopia.

The government has fully adopted the institutional framework, and the required 165 staff positions that were identified will be designated as government staff rather than contractual positions. There have been problems in finding qualified candidates to fill these positions, and the government has requested further HEF support in identifying those key positions that are critical to start up the basin and sub-basin organizations and develop water resources management plans.

Looking Forward

HEF support proved to be instrumental as a catalyst for the ongoing work of the TBIRDP. It helped to underscore the importance of structured stakeholder consultation and participation to empower the communities and facilitate the development of an ownership-based shared vision for the sub-basins. It also helped to show that shared knowledge was the critical missing link for that to happen (and that shared knowledge is vital to improving the integrated management of the Tana and Beles sub-basins). Scientists and technicians need to collect more data about the basin, managers need to have a fuller understanding of the implications of their plans, and communities need to know more about how their actions affect the basin.

HEF work has helped to plant the seeds for the growth of this knowledge base in a participatory manner. Both the TBIRDP team and the government of Ethiopia are keen to build on these results, as evidenced by the request for additional HEF support, as well as by current plans to replicate these approaches in other basins.

References


