

Creating Benefits from Cooperation in Shared Water Resources: Lesotho's Highlands Water Project Phases IA and IB

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BACKGROUND

The Kingdom of Lesotho is land-locked country surrounded by the Republic of South Africa. It is one of the world's poorest countries, with a population of about 2.1 million. The economy is substantially dependent on South Africa as a source of income, employment and foreign exchange. Most of Lesotho's land area is mountainous and ill-suited for agriculture, but there is an abundance of water. In the early 1980s, less than 6 percent of its water was consumed domestically, with the remainder running through South Africa to the sea. South Africa, on the other hand, was chronically short of bulk water—particularly in the country's industrial heartland of Gauteng, some 400 km north of Lesotho.

During the mid-1980s, with growing water demand in Gauteng, assessments of possible inter-basin transfers were carried out. It was determined that the Lesotho Highlands Water Project (LHWP) was the least-cost solution to meet water demand in Gauteng. Through a series of dams and tunnels, it would divert a portion of the water currently leaving Lesotho in the Senqu and Orange Rivers northward to the Vaal River Basin in Gauteng. In 1986 the governments of Lesotho and South Africa signed a Water Treaty to carry out the LHWP. It was divided in four phases to be implemented between 1990 and 2020, with the ultimate aim to transfer 70m³/sec water from Lesotho to South Africa. The Treaty committed the two countries to implement Phases 1A and 1B of the LHWP, transferring water in the amount of 18 m³/sec and 12 m³/sec, respectively, and left the subsequent phases open for further negotiations. Under the Treaty, South Africa was to meet all costs of the transfer scheme, and pay a water royalty to Lesotho in the amount of 56 percent of the cost savings realized by South Africa through implementing the project rather than the costlier next best scheme. The World Bank supported Lesotho through assistance to the preparatory phase of the LHWP, and through two subsequent loans for

the first phase: the Highlands Water Projects, Phase IA and Phase IB, each covering about 3 percent of total costs of the respective subphase.

PROJECT DESCRIPTION

Project Phase IA was implemented from 1990 to 1998. Its main objective was to develop Lesotho's water resources and alleviating water shortages in South Africa through the construction of dams, tunnels and controls—and thereby put in place the physical and managerial capacity for Lesotho to earn export revenues from the sale of water to South Africa. Additional objectives were to produce hydropower for Lesotho; use the export revenues for development-oriented programs; safeguard environmental and compensation aspects; ensure dam safety and emergency preparedness; and prepare for later construction phases of the LHWP.

At the time of its inception, Phase IA was the largest public sector undertaking and the most significant transnational operation in Africa. The Joint Permanent Technical Commission, a bi-national body, was to safeguard the interests of the two governments involved. The Lesotho Highlands Development Authority, an agency created as a result of the Water Treaty, was responsible for executing project activities in Lesotho; its counterpart agency in South Africa was the Trans Caledon Tunnel Authority. To help ensure that operations met rigorous international standards, two expert panels were set up to review the project's construction components and its environmental and social components.

Implemented from 1998 to 2006, Project Phase IB continued with the main objective of Phase IA, and focused on mitigating any adverse social and environmental impacts and maximizing the local development spin-offs. It included support for the construction of a second major dam and tunnel, and related infrastructure works; engineering super-



LESOTHO AT A GLANCE

Population: 2 million — 25% urban, 75% rural;
0.7% annual growth rate
Surface area: 30,350 km²
Life expectancy: 42.9 years
GNI per capita: US\$ 980

Human Development Index Ranking:

138 out of 177 countries

% below the basic needs poverty line: 68% (1999)

MORE INFORMATION

Lesotho Highlands Water Project Phase 1B. Project Appraisal Document. World Bank, 1998

Lesotho Highlands Water Project Phase 1B. Implementation Completion and Results Report. World Bank, 2007

Lesotho Highlands Water Project. Website of the Lesotho Highlands Development Authority

vision; implementation of an environmental and social action plan; and administration and capacity building, mainly directed at the Lesotho Highlands Development Authority.

PROJECT OUTCOMES

Outcomes of phases IA and IB included:

- Civil works of both phases were successfully completed, and are delivering water in the targeted amounts of 18 m³/sec and 12 m³/sec to South Africa. Lesotho's revenues from water sales exceeded targets. In 2007 the LHWP contributed 4.8 percent to Lesotho's gross domestic product.
- The hydropower complex was brought on line and is generating 47 MW of power; revenues were below expectations, mainly because the government fixed tariffs at very low levels.
- The Lesotho Highlands Development Authority has become an effective and sustainable organization. During Phase 1A, more than 500 staff were trained, and capacity building continued during Phase 1B. Financial irregularities and certain corrupt practices that occurred during Phase 1A were addressed.
- The highlands community benefited from good access roads, power and communication networks, and job creation. In phase 1B alone, some 9,000 local jobs were created compared with a target of 3,000.
- During phase 1A Lesotho set up a fund for the revenues from water sales which were to be disbursed for community identified labor based infrastructure projects. While this was successful in starting a poverty focused public works program, the fund suffered from a number of weaknesses in technical review, transparency and accountability. These weaknesses were addressed during phase 1B.
- The Environmental Action Plan of phase 1A neglected to account for some potential environmental impacts (e.g. environmental flow requirements). More emphasis was given to environmental issues in phase 1B, including to the development of an environmental flow policy and procedures for ongoing operations. Yet not all aspects of the Environmental Action Plan were implemented, and at project closure it was recommended that further support be provided to complete the action plan.

LESSONS LEARNED

- The Lesotho Highlands Development Authority was initially set up as a construction agency. While it performed on engineering and technical related activities, it was less well suited to handle the complex environmental and social aspects. These must be fully integrated into the design and implementation of large water storage and transfer projects.
- Environment and resettlement activities as well as community driven development were not synchronized with construction. Because these activities require more time to implement, multi-phase investments should address them one phase ahead of physical investment.
- Even though the two loans provided only a small fraction of project costs, the governments of Lesotho and South Africa considered World Bank participation to be crucial for ensuring that the LHWP met sound economic, technical, dam safety and environmental standards, and for obtaining broad international support.

SCALING UP

The LHWP is considered to be one of the few successfully implemented projects in the world aimed at regional water management. Phases IA and IB have made use of the comparative advantages of Lesotho and South Africa to the mutual benefit of both countries—with Gauteng receiving much needed water, and Lesotho receiving revenues from water export and hydropower. Future phases of the LHWP envisioning additional water transfers to South Africa may be delayed. A main reason is that South Africa in the mid-1990s, with World Bank help, started to focus less on engineering solutions to supply water to meet growing needs and more on measures for managing water demand. In the longer-term, the LHWP may still continue to be a key underpinning for Gauteng's and Lesotho's future development.

RELEVANT PROJECTS

Highlands Water Project Phase 1A

Project ID: P001396
 Timeline : 1990–1998
 Loan Amount: US\$ 68.9 million

Highlands Water Project Phase 1B

Project ID: P001409
 Timeline: 1998–2006
 Loan Amount: US\$ 45 million

