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Development and adoption of a Strategic Action Programme for balancing water uses and sustainable natural resource management in the Orange-Senqu River transboundary basin

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1. The State of the Orange-Senqu River System Report: Contributing towards finalising the TDA, the 2010 Joint Orange-Senqu Survey investigated water quality issues. This Survey was the joint effort of all ICP supported projects under ORASECOM, the Orange-Senqu River Commission. It covered physical and chemical water parameters, bio-monitoring as well as specialist surveys on heavy metals and persistent organic pollutants (POPs). The comprehensive survey of POPs in a larger river basin was a 'first' in the region.
2. Institutional strengthening of ORASECOM towards developing an IWRM Plan of the Basin: Planning requires informed debate and a structured approach towards consultation across national borders. The project currently develops the ORASECOM Water Information System, a web-based data and information sharing portal. Transboundary Environmental Assessment Guidelines are also currently under preparation. These Guidelines will define the process for consultations on environmental impacts in a transboundary context. They are also a 'first' in the region. Already other southern African river basin organizations have expressed their interest in this work.
3. The Preliminary TDA highlighted three thematic areas for practical research and action on the ground. Scoping studies on water resources management issues in the irrigation sector (the largest water user in the basin), the setting of environmental flow requirements, as well as on overcoming land degradation through community-based management approaches have been completed. Consultations with the affected communities at grassroot level have been conducted. The implementation of practical measures on the ground is now starting.

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PROJECT OBJECTIVE

The Project assists the Orange-Senqu riparian States Botswana, Lesotho, Namibia and South Africa to identify the principal threats and root causes of transboundary water resources issues, and to develop and implement a sustainable programme of policy, legal and institutional reforms, and investments to address these threats.

Competing water uses in the context of dwindling and uncertain future supplies is seen as the critical issue in the basin and will be a principal focus of project attention from the very outset. The Project will create synergies with and build upon a range of initiatives being undertaken by the countries themselves and international cooperating partners that have given priority to the Basin.

The project uses the Transboundary Diagnostic Analysis (TDA) and Strategic Action Programme (SAP) process. The preliminary TDA is currently updated. Based on this, a SAP and associated National Action Plans (NAPs) will be formulated. The SAP and the NAPs are part of a wider regional IWRM Plan, developed by ORASECOM, the Orange-Senqu River Commission.

The preliminary TDA identified five priority transboundary issues: 1) Stress on surface and groundwater resources, 2) Altered flow regime, 3) Deteriorating water quality of surface and groundwater, 4) Land degradation and 5) Alien invasives.

In finalising the TDA the project conducts further research on qualitative and quantitative water issues, namely conducting a detailed water yield assessment and demand forecast for the Orange Senqu Basin, as well as water quality surveys.

The project also contributes to the institutional strengthening of ORASECOM through developing a web-based data and information sharing portal, and guidelines for environmental assessments in a transboundary context.

Three pilot projects focus on the setting of ecological flows; water demand and quality management in the irrigation sector; and land degradation and rangeland management. These pilots will research and demonstrate new approaches and techniques, and promote replication throughout the Basin.

RESULTS: PROCESS

The project develops a web-based data and information portal.

On the occasion of the World Water Day in March 2011 the Ministers in charge of water affairs in the four riparian States confirmed their strong commitment towards establishing transboundary EA Guidelines. A joint working group composed of respective specialists of the countries, as well as a consultant has since taken on this task. Draft guidelines will be presented to the ORASECOM Council in October 2011.

INDICATOR#1 Water Information System functional and active: Data and information portal created, providing access to spatial and time series data, as well as scientific information to a wide range of stakeholders from throughout the basin and internationally.

INDICATOR#2 Transboundary EA Guidelines prepared and agreed: Transboundary EA Guidelines drafted and agreed by ORASECOM. This includes including a listing of type and size of projects to which these guidelines shall be applicable.

RESULTS: STRESS REDUCTION

The Preliminary TDA identified the following transboundary problems: 1) Land degradation, and 2) Stress on surface and groundwater resources.

Respective pilot projects shall demonstrate stress reduction measures:

- Community-based rangeland management demo projects in Botswana and Lesotho: Land degradation and related water and natural resources management issues are now addressed through consultation and participation at grass-root level.
- A water management demo project in the irrigation sector will focus on water conservation, demand management as well as water quality issues. The demo project focuses on a larger, existing irrigation scheme, shared by Namibia and South Africa. The project works at three levels, it involves respective government departments of the two countries, the water user association, as well as individual farmers.

INDICATOR#1 Soil erosion reduced at the pilot sites, self-governance lessons and best practices for improved land/range management established. The formation of community based governance structures to improve land/range management with clear linkages to water resource management which can be used as models for replication in the OS basin and further afield.

INDICATOR#2 Water use efficiency improved at the transboundary pilot sites and best practices in irrigation water usage developed: A water management plan will address the pertinent issues at the catchment level, at the level of the water user association best management practices in metering, scheduling, and tariffing and water trading will be explored. At the level of individual farms metering, water use efficiency and crop enhancement are implemented. Lessons learnt shall inform a replicability strategy for the basin.

RESULTS: WATER RESOURCE AND ENVIRONMENTAL STATUS

In finalising the TDA the project undertakes a number of scientific studies related to water quality issues. A comprehensive survey of heavy metals and persistent organic pollutants covered some 60 sites in the basin. Riverine sediment, fish tissue and wild bird eggs were collected and analysed. This Survey was conducted under the umbrella of the wider 2010 Joint Orange-Senqu Survey, which also included physical and chemical water quality parameters, and the ecological health of the river system. The comprehensive survey of POPs is a first in the river basin in southern Africa.

Another study looked into the interaction between the freshwater system of the Orange-Senqu River Basin and the marine environment of the Benguela Current Large Marine Ecosystem. This work also served as input into a research project that will formulate environmental flow requirements.

The research project on environmental flows in Namibia and South Africa will focus on expanding the established methodology for determination of environmental flow requirements for ephemeral rivers and for estuaries. The project includes a monitoring programme, covering two hydrological cycles at several sites. It shall recommend environmental flow setting as well as propose a longer term efficacy and compliance monitoring system. This research project shall also contribute towards the development of a management plan for the Ramsar site at the Orange-Senqu Estuary, a joint initiative of the environment departments of Namibia and South Africa.

INDICATOR# 1 Priority transboundary issues are analyzed through additional studies, immediate and root causes of priority transboundary issues identified: A updated, comprehensive TDA will form a solid scientific base for the comprehensive, basin-wide IWRM Plan) of ORASECOM. Investments shall target root and underlying causes of prioritized transboundary issues.

INDICATOR#2 Limits agreed basin wide to assure preservation of ecological flows for the surface and subsurface flows of the Lower Orange: Agreement on the methodology and criteria for setting ecological flows throughout the Basin, including seasonal rivers. Setting of ecological flow to provide protection to the Orange-Senqu Estuary and its associated Ramsar site.

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