

# ORANGE-SENQU

## River Commission



2000 - 2015





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2000 - 2015



**ORANGE-SENQU River Commission**

Block A, 66 Corporate Park

Cnr Von Willich & Lenchen Streets, Centurion, Gauteng

Tel +27 (0) 12 663 6826 Email [lenka.thamae@orasecom.com](mailto:lenka.thamae@orasecom.com)

Website [www.orasecom.org](http://www.orasecom.org)

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## PREFACE

The Orange-Senqu River Commission (ORASECOM) Agreement signed in November 2000 is a major accomplishment on the journey of transboundary water cooperation. It represents the realisation of the common future as espoused in regional instruments including the Southern African Development Community (SADC) Treaty as well as in the sector-specific Protocols and Agreements. The Orange-Senqu Basin, which covers part of Botswana, Namibia and South Africa and the whole of Lesotho, has natural resources ranging from water, land, soils, forests, wildlife and the minerals that are plentiful under the soil. Since most of these are shared, achieving sustainable natural resource management for socio-economic development requires regional cooperation, an integrated ecosystems approach, and a common understanding of the natural resource base.

For the past 15 years the Commission undertook a journey that first focused on creating a common understanding of the natural resource base, then the demands placed on the resources. The premise to this effort was around the saying “you cannot manage what you do not know”.

Parallel to the common understanding actions, the Commission agreed to a set of targets that would lead its work programme towards a strategic basin-level plan for joint management and development. Six thematic areas were adopted beginning with institutional establishment and strengthening, including capacity development for the Member States delegations; gap-filling studies; hydrological and demand data alignment and modelling; environmental/ecological flows assessment; future projections; monitoring; and ultimately the consolidation of a basin-level Integrated Water Resources Management (IWRM) Plan.

These components were realised over a period of almost 10 years. We can now proudly submit that the Commission has defined a basin-level IWRM plan that provides forecasts up to at least 2040 and incorporates all available infrastructure and conservation interventions from the four Member States into one plan. This alone demonstrates the level of transparency, trust and confidence prevailing within the Orange-Senqu River Basin and among ORASECOM Member States as we celebrate 15 years of transboundary water cooperation.

This report seeks to provide a reflective and analytical overview of transboundary water cooperation within the Basin, and by its nature does not seek to detail progress on specific projects and initiatives undertaken by the Commission. We hope the report will provide some baseline for future reflections and serve as a benchmark for evaluations and assessments of accomplishments of transboundary cooperation with particular focus on peculiarities of the Orange-Senqu River Basin and the four Member States.

We wish to express our collective thanks to our Cooperating Partners without whom we would not have achieved as much.

Dr O. Obakeng  
Head of Delegation  
Botswana



August 2015

Mr R. Mosisili  
Head of Delegation  
Lesotho



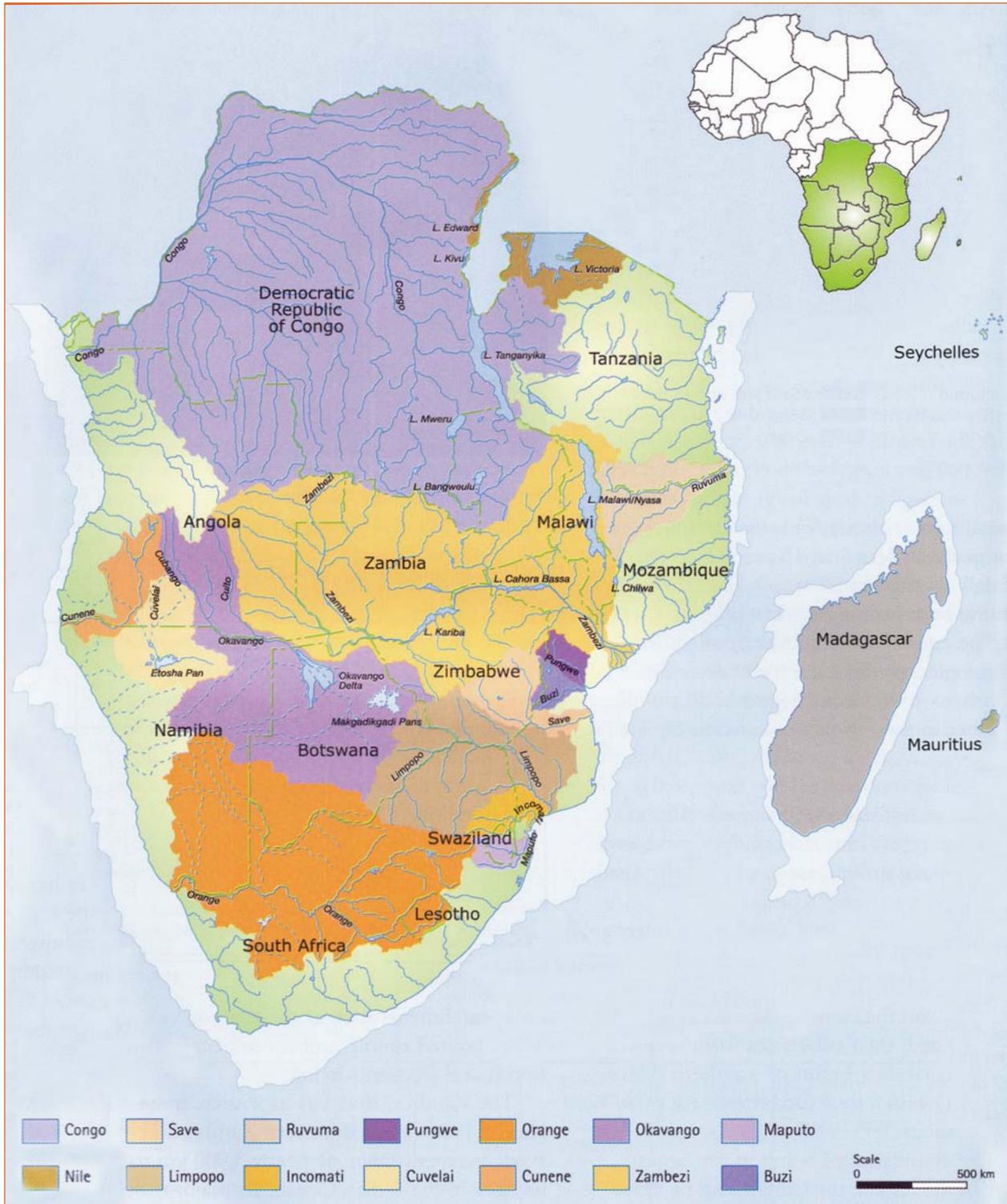
Mr S. Kashindi  
Head of Delegation  
Namibia



Mr L. Mabuda  
Head of Delegation  
South Africa



Map 1 Main International River Basins in Southern Africa



Hirji, R. et al, *Defining and Mainstreaming Environmental Sustainability in Water Resources Management in Southern Africa*, p24, 2002

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# ACRONYMS

|            |  |
|------------|--|
| AEH        | Aquatic Ecosystem Health   |
| ANBO       | African Network of Basin Organizations   |
| AusAID     | Australian Government Overseas Aid Program   |
| BMZ        | German Federal Ministry for Economic Cooperation and Development                           |
| CTT        | Communication Task Team  |
| DFID       | Department for International Development   |
| DGIS       | Directorate General for International Cooperation of the Netherlands                       |
| DRBMP      | Danube River Basin Management Plan   |
| EIA        | Environmental Impact Assessment  |
| EU         | European Union   |
| FANR       | Food, Agriculture and Natural Resources  |
| FGEF       | French Global Environment Facility   |
| GEF        | Global Environment Fund  |
| GIZ        | Deutsche Gesellschaft für Zusammenarbeit   |
| IAPP       | International Association for Public Participation   |
| ICP        | International Cooperating Partner  |
| ICPDR      | International Commission of the Protection of the Danube River                             |
| IWRM       | Integrated Water Resources Management  |
| JBS        | Joint Basin Survey   |
| JIA        | Joint Irrigation Authority   |
| JPTC       | Joint Permanent Technical Commission   |
| LHWC       | Lesotho Highlands Water Commission   |
| LHWP       | Lesotho Highlands Water Project  |
| LIMCOM     | Limpopo River Basin Commission   |
| LME        | Large Marine Ecosystem   |
| miniSASS   | mini South African Scoring System  |
| NAP        | National Action Plan   |
| NBI        | Nile Basin Initiative  |
| NGOs       | Non-Governmental Organizations   |
| NWG        | National Working Groups  |
| ORASECOM   | Orange-Senqu River Basin Commission  |
| OSRLB      | Orange-Senqu River Learning Box  |
| POP        | Persistent Organic Pollutant   |
| RAK        | River Awareness Kit  |
| RBO        | River Basin Organization   |
| RISDP      | Regional Indicative Strategic Development Plan   |
| RSAP       | Regional Strategic Action Plan   |
| RSAP-IWRM  | Regional Strategic Action Plan on Integrated Water Resources<br>Development and Management |
| RWG        | Regional Working Group   |
| SADC       | Southern African Development Community   |
| SADC ELMS  | SADC Environment and Land Management Sector  |
| SAP        | Strategic Action Programme   |
| TDA        | Transboundary Diagnostic Analysis  |
| UN         | United Nations   |
| UNCCD      | United Nations Convention to Combat Desertification  |
| UNDP       | United Nations Development Programme   |
| UNESCO-IHE | UNESCO International Health Exchange, Institute for Water Education                        |
| WIS        | Water Information System   |
| ZAMCOM     | Zambezi Watercourse Commission   |

Map 2 Orange-Senqu River Basin



Digital Elevation model-CGAR SRTM Database  
 Rivers-UNDP/GEF  
 Dams/Waterbodies-UNDP/GEF  
 X:\Data\ProjectGTZ419\GIS\_mxd\1.riverbasin\1.1.1\_BasinLandscape\_v1\_20000301.mxd

## BACKGROUND AND CONTEXT



### 1.1 Introduction

The past 15 years have been an exciting period for the Orange-Senqu River Basin, ushering in new developments that have promoted transboundary cooperation in southern Africa and beyond. A lot has happened since the establishment of the ORASECOM in 2000. An enabling environment has been created, which can serve as a solid foundation for the continued implementation of many decisions and strategies developed, chief among them the IWRM Plan adopted in February 2015.

This 15-year report outlines key achievements and milestones towards transboundary water cooperation as it evolved within the basin between 2000 and 2015. The report reflects ORASECOM's specific deliverables and efforts towards realising its mandates as well as highlighting gaps and challenges faced by the commission. Both literature review and consultative approach were used to compile the report. Interviews through face-to-face and telephone as well questionnaires were employed to get stakeholders views.

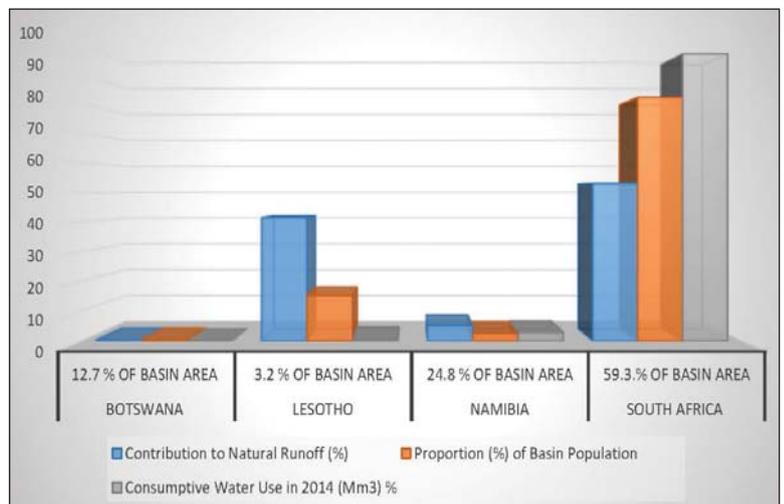
### 1.2 Basin Description

From the snow-capped mountains of Lesotho through the bustling urban centres of South Africa to the red sands of the Kalahari in Botswana and the scorching desert landscape of Namibia, the Orange-Senqu River unites the four countries. Map 2 shows the location of the basin in relation to the continent. The Orange-Senqu River Basin is the third largest in southern Africa after the Congo and the Zambezi. The river rises from an altitude of almost 3,500 metres in the Maluti Mountains in Lesotho where it is called Senqu and flows 2,300 kilometres to its mouth at Oranjemund and Alexander Bay in Namibia and South Africa respectively.

Of the total basin area of 1 million sq km, 12.9 percent is in Botswana, 3.2 in Lesotho, 24.8 in Namibia and 59.3 percent is in South Africa. The basin covers the whole of Lesotho, the majority of South Africa and significant portions of Botswana and Namibia. According to the IWRM Plan of 2014, the basin has a population of more than 14 million people, with 81.7 percent residing in South Africa, 15.4 in Lesotho, 0.3 in Botswana, and 2.6 percent in Namibia. A summary of the key basin characteristics is shown in Figure 1.1.

The climate of the basin varies significantly along the pathway of the river from the temperate climate of the mountains in Lesotho receiving average annual rainfall of 1,800mm, through dry grasslands and savannah, to the arid landscapes of the semi-desert Nama and Succulent Karoo regions close to the river mouth, receiving an

Figure 1.1 Summary of Basin Characteristics



ORASECOM 2014, Integrated Water Resources Management Plan for the Orange-Senqu River Basin Report No. 019/2014

average of 45mm per year. Botswana, Namibia and South Africa are classified under dry climates ranging from semi-arid to sub-humid conditions, while Lesotho is under climatic conditions ranging from dry to moist Subtropical Mid-Latitude conditions.

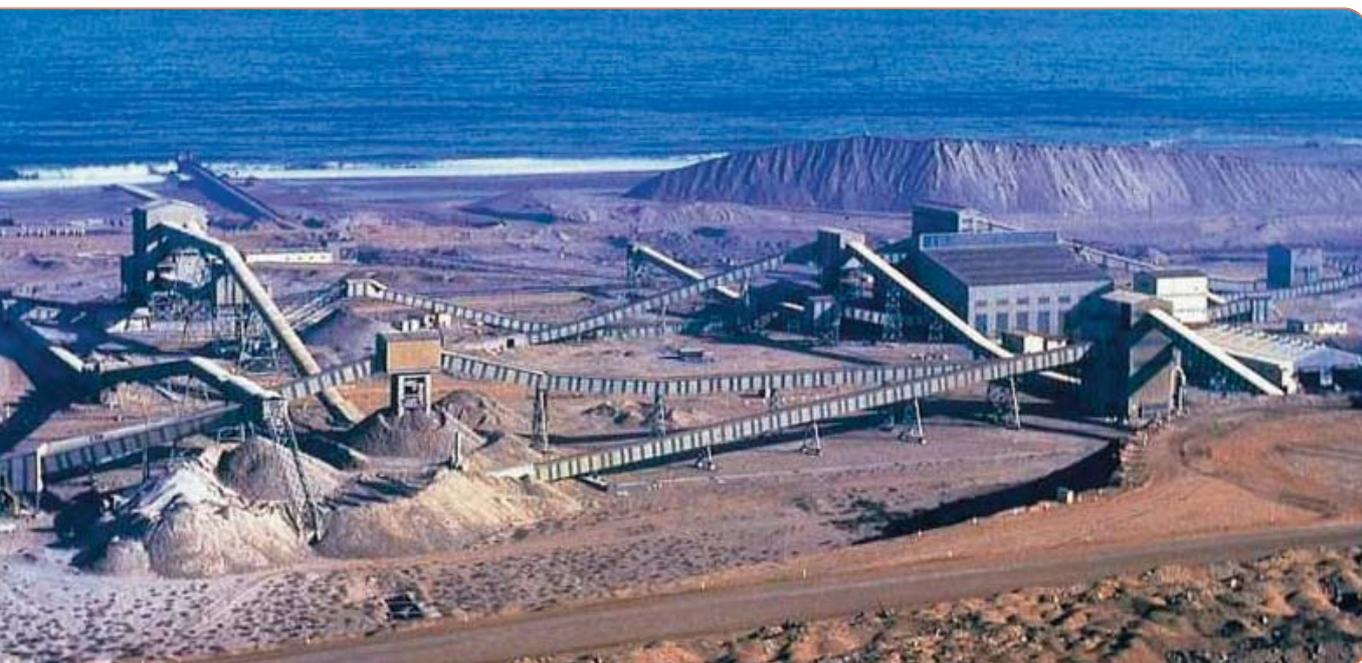
According to the Orange-Senqu River Basin Preliminary Transboundary Diagnostic Analysis of 2008, the largest portion of the basin mainly in Botswana, Namibia and South Africa, is covered by sands or weakly developed soils that have been influenced by the semi-arid climate. Soils in Lesotho described as Mountain Black Clays are known to be shallow at high altitude and are easily eroded by cultivation and overgrazing. The shallowness has resulted in high rates of erosion within the basin since agriculture is the dominant economic activity.

Lesotho farmers own hundreds of thousands of cattle in total. Due to uncontrolled grazing some parts of the land is degraded as reduced vegetative cover and disturbed soil surfaces result in increased wind and water erosion. Furthermore weather changes especially in Lesotho encourage soil erosion in the basin.

During summer, soil on the summit becomes waterlogged, and in winter it usually freezes making it loose and prone to erosion.

In the basin highlands, there is an extensive network of wetland bogs and sponges which are crucial in the hydrological cycle of the entire river system. Wetlands cover approximately 0.8 percent of the total basin area. The floodplains and reservoirs provide important water storage capacity. Wetlands resources especially in the Vaal and Upper Orange-Senqu sub-Basins provide numerous socio-economic development benefits to the riparian states. On the other hand, the Kalahari is scattered by closed basins and pans which are a source of water for the people and wildlife in the arid land. The Vaal River in South Africa and the ephemeral Fish River in Namibia are the main tributaries of the Orange-Senqu River.

The main economic activities of the basin are agriculture, mining and industry. Two large water schemes have been developed along the Orange-Senqu River to provide water for these activities through the establishment of the Lesotho Highlands Water Project (LHWP). The vast majority of water resources development in Lesotho has been for export, either as raw water via the LHWP or through the generation of hydroelectricity. This trend will change with the development of the Metolong Dam which is expected to supply water in the upper basin including for irrigation.



Mining has become a growing industry in the basin

Within the upper catchment of the basin that covers Lesotho and some parts of South Africa, extensive sheep and cattle farming are common, with small scale vegetable growing. In most parts of South Africa, the Orange-Senqu River supports the urban and industrial heartland of Gauteng. It also support large areas of irrigation, producing crops for local consumption as well as for regional and international exports.

The basin within Botswana, and mainly in the middle part, is very sparsely populated, with no major urban centres. As a result water demand is currently low and almost entirely fed by locally developed groundwater sources.

A great percentage of water from the lower part of the river which is home to fewer people and covering parts of Namibia and South Africa, is used for agriculture, supported by irrigation from ground water. Grapes and other commercial crops are grown.

Mining in the basin is well industrialized and contributes significantly to the economies of Botswana, Namibia and South Africa. Minerals that are found in the basin include gold, diamonds, uranium and base metals .However the extraction and processing of these minerals have implications on water quality in the basin.

### 1.3 History of Transboundary Cooperation in the Orange-Senqu Basin

Before the signing of the ORASECOM Agreement in 2000, Basin States had concluded some bilateral agreements and commissions to facilitate cooperation in water management and economic development. Botswana, Lesotho and Namibia had separate bilateral arrangements with South Africa.

The first bilateral arrangement was the establishment of the Joint Technical Committee between Lesotho and South Africa in 1978. This was followed by the signing of the Lesotho Highlands Water Project Treaty by Lesotho and South Africa in 1986. The Treaty established the Joint Permanent Technical Commission (JPTC) to represent the two countries in the implementation and operation of the Lesotho Highlands Water Project. The JPTC was in 1999 renamed the Lesotho Highlands Water Commission (LHWC) with a secretariat based in Lesotho to monitor and oversee the Treaty.

Botswana and South Africa formed a Joint Permanent Technical Committee in 1983, while Namibia and South Africa established a Joint Technical Commission in 1987 and later the Permanent Water Commission and Joint Irrigation Authority in 1992.

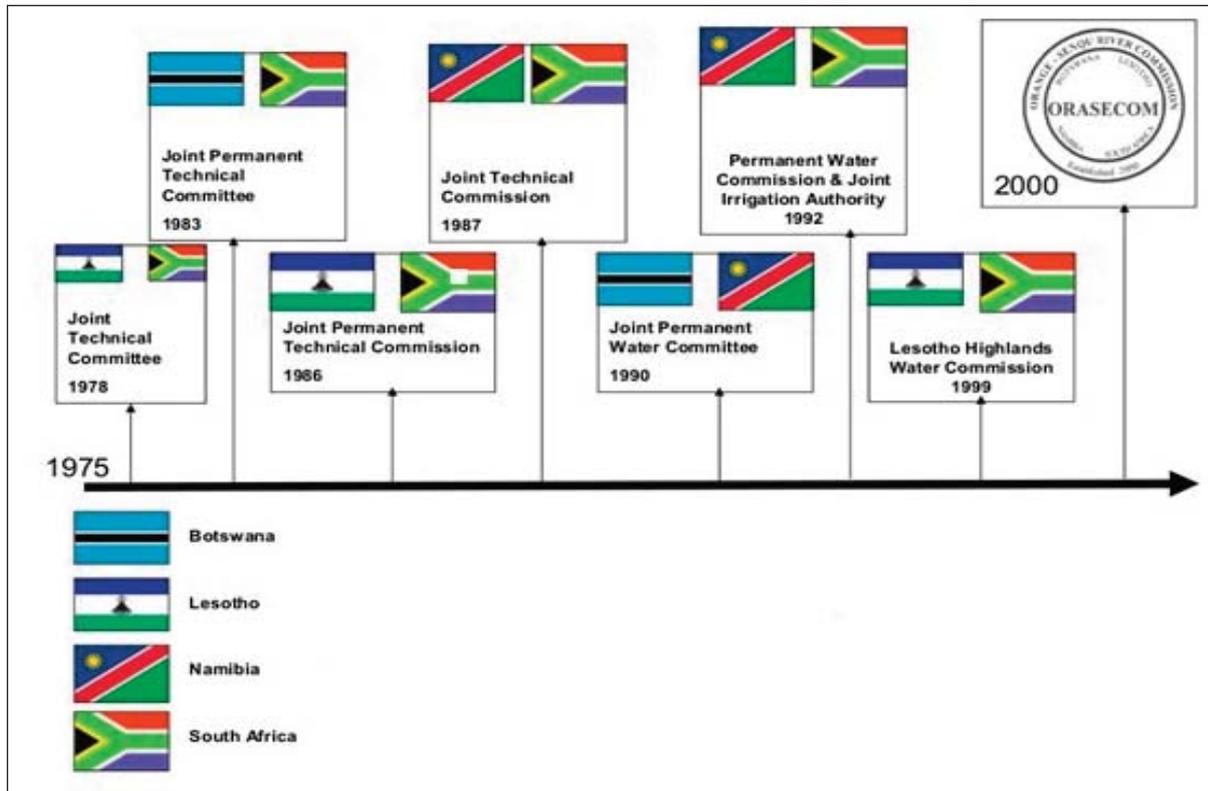
Figure 1.2 illustrates the bilateral arrangements that existed before the 2000 ORASECOM Agreement.

The ORASECOM Agreement provides that bilateral commissions established after entry into force of the basin-wide agreement “be subordinate” to ORASECOM, whereas existing Commissions “will liaise” with ORASECOM in terms of the Agreement.

A former Commissioner from Namibia, Eng. Harold Koch explains what used to happen before ORASECOM.

“If Namibia needed water from the Orange River or if there was any issue regarding the river, the country would approach the Department of Water Affairs in South Africa who regulated the flow. The response would be directed only to the officials who would have requested for the information, without any consultations with the other Basin States. It was upon the discretion of the South African officials to provide the water or not. Before ORASECOM, Namibia was allowed to take very little amount of water out of the Orange River and had to pay for the operations and maintenance of the infrastructure built along the river. Namibia would argue that the infrastructure had been built whilst the country was still part of South Africa. Hence Namibia had already contributed to the construction of the dams. The payment could only be for the infrastructures constructed after the independence of Namibia.” -- *Harold Koch, former Commissioner from Namibia*

Figure 1.2 Bilateral Arrangements Prior to 2000



There were also tensions between countries regarding some bilateral arrangements. According to the former Principal Secretary for Water in the Kingdom of Lesotho, Emmanuel Lesoma (now Principal Secretary for Energy), Lesotho and South Africa had been gripped by contention around the hydrology to be employed on the LHWP. Lesotho was suspicious about the model developed by South Africa. By the time the ORASECOM Agreement was signed, both Namibia and Botswana were already considering access to water from the Lesotho Highlands, with Namibia even contemplating a dedicated dam in Lesotho for this purpose.

A longstanding border dispute between Namibia and South Africa was one of the issues that required the two countries to cooperate. South Africa claimed that the border runs along the north bank of the Orange River while Namibia maintained that it follows the middle part of the river.

#### 1.4 Steps in the Establishment of ORASECOM

The discussion on establishing an Orange-Senqu River Commission (ORASECOM) dates back to the negotiations on a Zambezi Watercourse Commission (ZAMCOM) in the early 1990s. A former Namibian Commissioner, Piet Heyns, recalls that, during one of the Zambezi River Action Plan (ZACPLAN) meetings, the discussion turned to the need to establish a regional framework that would cover all river basins before considering basin-specific agreements.

Given the scarcity of water in most of the region and the number of trans-boundary watercourses, the potential for disputes over the development and utilisation of water resources was increasing. The desire to move from dispute potential to prevention through regional cooperation and integration was the basis for the formulation of a region-wide legal framework called a protocol.

The protocol was developed through one of the ZACPLAN projects, the Zambezi Action Programme (ZACPRO) 2, which aimed to establish a basin-wide legal and institutional framework to facilitate environmentally friendly and sound management of the Zambezi river basin. A process of negotiation was initiated in 1993 to formulate the SADC Protocol on Shared Watercourse Systems which was adopted and signed in 1995 by 10 mainland Member States. This was the first SADC Protocol to be developed by SADC since the adoption of the SADC Declaration and Treaty in Windhoek, Namibia in 1992.

The SADC Treaty provided an overall framework for Member States to cooperate on common issues such as water. As a result, a water unit was created within SADC's Environment and Land Management Sector (SADC ELMS) coordinated by the Kingdom of Lesotho. SADC ELMS was one of eight sector coordinating units which were grouped together under the Food, Agriculture and Natural Resources (FANR) programme which was coordinated by Zimbabwe.

The focus of activity for ELMS included water resources management, as well as environment and land management, and the sector achieved some success in involving local communities in environmental awareness. Some work was done on the sustainable use of water resources and on shared water systems. The management of water resources was separated from ELMS following a Council Decision in January 1996, and established as a Water Sector, as noted in the SADC Annual Report of July 1995-June 1996.

A protocol amendment process was undertaken from 1997-1999 and the SADC Protocol was revised to reflect the developments in international law, particularly the United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses (the UN Watercourse Convention) of 1997. The revised protocol, the SADC Protocol on Shared Watercourses, was signed in 2000 and entered into force in 2003 upon ratification by two-thirds of SADC Member States.

The main objective of the SADC protocol is to foster closer cooperation for judicious, sustainable and co-ordinated management, protection and utilization of shared watercourses and advance the SADC Agenda of regional integration and poverty alleviation. See the main points of the Protocol in Box 1.1.

#### Box 1.1 Main Points of the SADC Protocol on Shared Watercourses

- Ensuring that utilisation of shared watercourses is open to each riparian state without prejudice to its sovereign rights;
- Observing the objectives of regional integration;
- Ensuring that all interventions are consistent with sustainable development;
- Respecting the existing rules of customary and general international law;
- Recognising the unity and coherence of each shared watercourse system;
- Maintaining a balance between water resources development and conservation;
- Pursuing close cooperation in the study and execution of all projects on shared watercourses, exchange of information and data;
- Utilising a shared watercourse in an equitable and reasonable manner;
- Maximising the benefits from a shared watercourse through optimal and sustainable development;
- Participating and cooperating in the use, development and protection of a shared watercourse;
- Taking all appropriate and reasonable measures when utilising a shared watercourse to prevent significant harm to other states;
- Eliminating or mitigating such harm and where appropriate, discussing and negotiating the possibility of compensation; and
- No state shall deny anyone the right to claim compensation or other relief in respect of significant harm caused by activity carried out in a shared watercourse.

Revised Protocol on Shared Watercourses in the Southern African Development Community, SADC, 2000

While the UN Watercourse Convention was voluntary, the SADC Protocol on Shared Watercourses was now binding on those Member States that had ratified or acceded to the protocol. The ORASECOM Agreement was established to align with these regional and international frameworks.

Khomoatsana Tau, a founder Member of Council and leader of the Kingdom of Lesotho delegation, recalls that Namibia had been the main force in calling for the establishment of an institution, constructed along the principles outlined in the UN Watercourse Convention. Namibia was concerned that these agreed international legal principles, in particular that of “significant harm”, would be overlooked or ignored in the development of the Lesotho Highlands Water Project (LHWP).

The existing bilateral commissions between Lesotho and South Africa and between Namibia and South Africa made no provision for accommodating Botswana, the fourth Basin State. Namibia felt that a river basin commission covering all riparian states would be more in line with international practice in dealing with the non-navigational uses of shared watercourses. It was also envisaged that cooperation in the management of transboundary water resources would generate financial support from international cooperating partners and could lead to capacity building, joint planning, trust building and development of a common understanding among the Basin States through raising the knowledge base.

The decision to create a SADC Water Sector was formally agreed at a SADC Council of Ministers meeting in Maseru with Lesotho hosting the sector coordinating unit. The first meeting of SADC Ministers with responsibility for the water sector was convened on the initiative of Minister Kadar Asmal of South Africa and hosted by South Africa in Cape Town in 1996. On his invitation, Ministers of the Orange-Senqu River Basin States used this opportunity to discuss the desirability and possibility of establishing a basin commission for the Orange-Senqu River.

Ministers agreed that this goal should be pursued and Namibia was requested to prepare the first draft that would serve as a working document in negotiating a basin agreement. Namibia saw this as an opportunity to merge the Helsinki Principles and those of the UN Convention and design a formal instrument to regulate the use of the water of the basin. Namibia’s primary position was that the bilateral treaty between Lesotho and South Africa should fall under the jurisdiction of the basin agreement. This was strongly resisted by South Africa and Lesotho. The latter felt that this might jeopardise the royalties received from the arrangement. In a compromise deal it was agreed that agreements reached prior to the existence of the basin agreement would remain separate with the provision that they report regularly to the basin commission once agreed and ratified.

Namibia was particularly concerned with the long-term availability and sufficiency of water in the transboundary system. The principle of prior notification on initiatives that may affect other Basin States was therefore one of the key elements included in the agreement.

“There has been no one coordinating sub-regional organization to deal with issues such as water scarcity, and yet water has to be shared in a sustainable manner. Due to different levels of industrialization within the basin some Member States were using more water than others. Some had put infrastructure to regulate water flow but this could not be controlled if there was no formal agreement in place. Other stakeholders realized that if there was no proper regime in place, countries downstream such as Namibia would continue to be affected by the negative impacts of industrialization coming from countries upstream. It was with this principle that we found a way to share equitable and sustainable utilization of the water resources.” —*Matthias Kashindi, Commissioner and Member of the Legal Task Team, Namibia*

After a series of fruitful negotiations and joint commitment by Member States to work together in the development of the basin for the benefit of all, the agreement to formally establish the Orange-Senqu River Commission was finally concluded and signed by the Ministers responsible for water affairs in the four countries on 3 November 2000 at Okapuka, near Windhoek in Namibia.

## 1.5 Scope of the ORASECOM Agreement

The ORASECOM Agreement was the first legal instrument to implement the Revised SADC Protocol on Shared Watercourses which promotes the establishment of river basin agreements and institutions. As enshrined in the Protocol, the ORASECOM Agreement recognizes the principle of equitable and reasonable utilization as well as sustainable development of the resources. The two legal instruments support the Regional Strategic Action Plan on Integrated Water Resources Development and Management (RSAP-IWRM) for the SADC Water Sector, which was adopted in 1998. The RSAP has since been reviewed three times with the fourth programme (RSAP IV) being finalised to cover the period 2016-2020.

Article 1 of the Agreement recognizes the Orange-Senqu Commission as an international organization with legal personality within the legal system of each of the Parties, as well as capacity to enter into other agreements. According to the Agreement, the highest body of the Commission is the Council which consists of one delegation per Party. Each delegation consists of three members with one being the leader, who also serves as a co-chair at Council meetings. The objective of the Council is to serve as a technical advisor to the Parties on matters relating to the development, utilization and conservation of the water resources in the basin. Box 1.2 lists the functions of the Council as provided in the Agreement.

### Box 1.2 Functions of the Council

The functions of the Council are to take all measures required to make recommendations, or to advise the Parties on the following matters:

- Measures and arrangements to determine the long-term safe yield of the water resources in the river system;
- The equitable and reasonable utilization of the water resources in the river system to support sustainable development in the territory of each Party;
- The investigations and studies conducted separately or jointly by the Parties, with regard to the development of the river system, including any project or the construction, operation and maintenance of any waterworks;
- The extent to which the inhabitants in the territory of each Party concerned shall participate in respect of the planning, development, utilization, protection and conservation of the river system, as well as the harmonisation of policies in that regard and the possible impact on the social, cultural, economic and natural environment;
- The standardised form of collecting, processing and disseminating data or information with regard to all aspects of the river system;
- The prevention of the pollution of water resources and the control over aquatic weeds in the river system;
- Contingency plans and measures for responding to emergency situations or harmful conditions resulting from natural causes such as droughts and floods, or from human conduct such as industrial accidents;
- The regular exchange of information and consultation on the possible effects of planned measures;
- Measures with a view to arriving at a settlement of a dispute between two or more of the Parties; and,
- Such other matters as may be determined by the Parties.

Article 5 of ORASECOM Agreement



ORASECOM provides a platform for discussion

According to the Agreement, the Council meets at least once a year in ordinary session and each delegation has one vote. The Council may establish *ad hoc* working groups or committees comprising of representatives of the Parties. The Council may appoint technical experts and consultancies to provide expert opinion and advice on any matter referred to in Article 5 above. Parties shall employ their best efforts to collect process and disseminate data and information as well as notify others on planned measures.

The parties shall take all appropriate measures to prevent the causing of significant harm to any other Party. They shall take all measures to reduce and control pollution of river systems, protect and preserve the estuary, and prevent the introduction of invasive species. The Agreement has enabled communication among Member States on the conditions and activities happening on every part of the basin which may affect the other. This is in line with the Communication Strategy of 2010 that emphasises the need to inform others on developments that may affect other countries.

For the past 15 years of ORASECOM, most of the provisions of the Agreement have been achieved as discussed in Section 2.

## ACHIEVEMENTS AND CHALLENGES TOWARDS TRANSBOUNDARY COOPERATION SINCE 2000



### 2.1 Establishment of ORASECOM Institutional Structures

A notable milestone since 2000 is the operationalizing of the ORASECOM Agreement. The establishment of an enabling environment provided by the governance structures of the Commission is a great achievement.

Several actions on institutional development have been undertaken, including the development of rules and procedures for equal representation, equal powers and decision-making by consensus, benchmarking and seeking international best practices. By 2006, three main structures of the Commission were in place — the Council, Secretariat and the Task Teams.

The highest body of ORASECOM is the Council, which is supported by a Secretariat and a series of Task Teams that manage projects. The decision to establish a permanent Secretariat was reached in July 2004. South Africa signed an agreement to host the Secretariat in August 2006. The Commission has since appointed an Executive Secretary in 2007, supported by a Water Resources Management specialist, a Finance Officer and a Programme Assistant.

ORASECOM officially opened the Secretariat offices in Centurion, South Africa, in 2011.

The Secretariat's role in programme coordination and management includes the following functions:

- Coordinate ORASECOM activities and implement decisions;
- Serve as a repository of information related to the Orange-Senqu River Basin;
- Act as a focal point for ORASECOM with all external parties;
- Perform ORASECOM administrative functions;
- Conduct communication and promotion for ORASECOM;
- Programme and project development and management; and,
- Resource mobilisation.

The Secretariat ensures that the project meets the requirements of ORASECOM, while the embedded support provides for the day-to-day administrative management of the project according to the specific requirements. Before the implementation of any project, the Secretariat meets to plan the stages, time-frame, cost and the scope of each and every project. At the end of each project a report is made that is submitted to the Secretariat.

Thatayaone Dedede, Deputy Permanent Secretary in Botswana, says the establishment of the Secretariat was a wise step, noting that the Commission made up of government officials with heavy workloads would not have coped with its extensive programme. He recalls that when the decision was taken on whether or not ZAMCOM should have a secretariat, the example of ORASECOM and its successes were cited.

Responding to whether the current ORASECOM structure is fit for the purpose, Felix Malachamela, Council Member from the Kingdom of Lesotho, noted that the Secretariat has made impressive progress with very limited human resources. Dr. Eng. M.J. Tumbare notes that ORASECOM is fortunate in having engaged Lenka Thamae as Executive Secretary. Dr Tumbare is an expert in water resources infrastructure and transboundary river basin management, and former Chief Executive of the Zambezi River Authority estab-

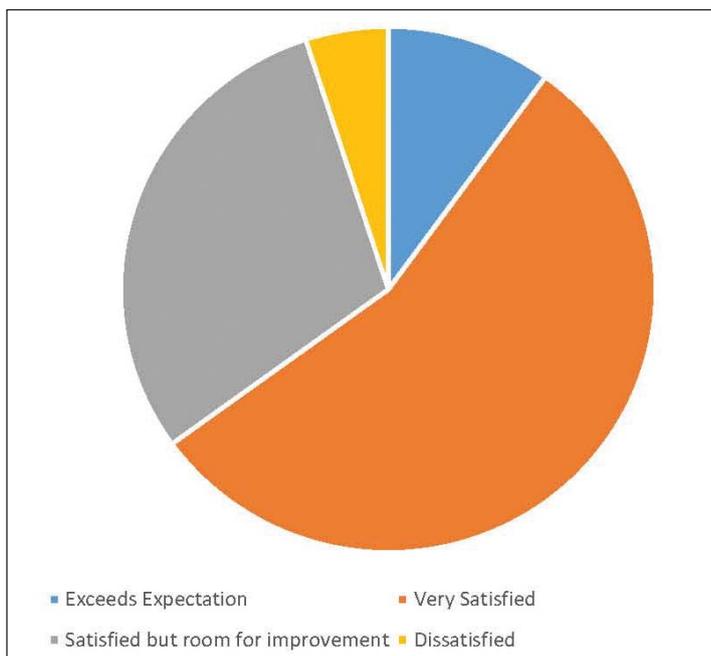
lished by Zambia and Zimbabwe. He spoke about Thamae’s long experience of SADC ELMS and the Water Sector Coordinating Unit where he was introduced early to understanding of the regional and transboundary nature of water, adding that the Water Sector was the most successful sector in SADC or perhaps on the continent. He said the ORASECOM Executive Secretary has been groomed in a coordination platform through his work at SADC ELMS and, benefitting from his knowledge, ORASECOM has become a pacesetter in best practice globally.

Dr Jeffer Sakupwanya, a specialist in water resources engineering and management, pays particular compliments to the Executive Secretary for the passion he brings to his job. Dr Sakupwanya, who was also at the Zambezi River Authority and is now Chief Executive of the Zimbabwe National Water Authority, says the Executive Secretary is clear where he wants to take the institution in line with the wishes of the Member States. “This gives assurance to International Cooperating Partners, thanks to both the commitment of the riparian states and the confidence they have in the ES,” he says. However, he cautions that ORASECOM should remain vigilant of possible hegemonic tendencies due to power imbalances.

Thomas Schild of the German development agency, *Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)* has similar sentiments about the Executive Secretary. He is impressed by what he sees as Thamae’s skill in consulting extensively and inclusively, and having a good grasp of what his constituency wants. These traits have been of great value to ORASECOM. “Success in coordinating the various ICPs and resisting the temptation to agree to projects offered, irrespective of relevance, has been critical in keeping ORASECOM focused,” says Schild.

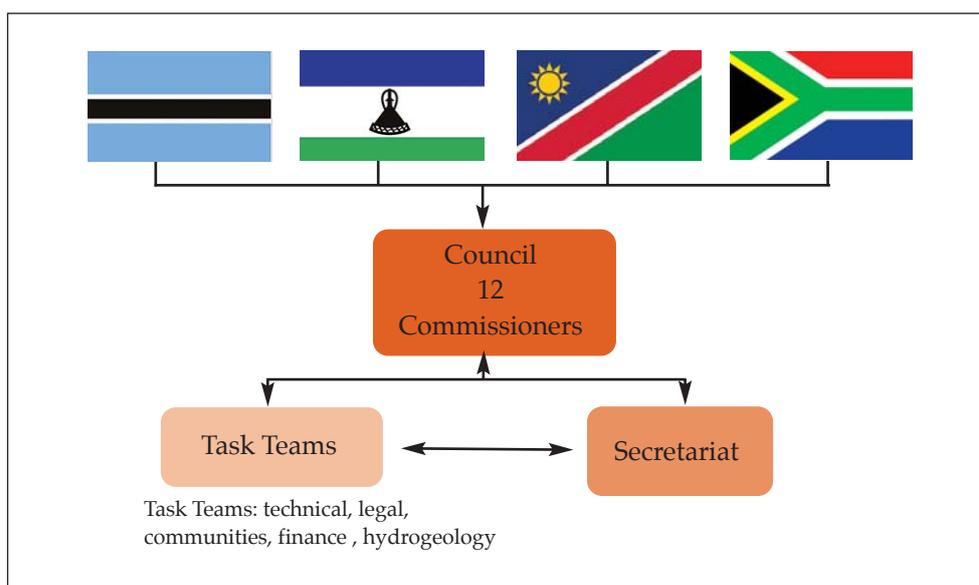
Many of those interviewed have found the coordination role of the Secretariat impressive in efficiency and effectiveness of its execution. This has been supported by the results of the Institutional Review carried out in 2014 in which 95 percent of the respondents expressed satisfaction with the Secretariat’s work. The chart shown as Figure 2.1 indicates that of the 95 percent who are satisfied, 55 percent are very satisfied and 10 percent hold the opinion that the Secretariat’s performance is exceeding expectations.

Figure 2.1 Stakeholder Perception of the Secretariat



Another organ of the Commission is a series of Task Teams established by Council and made up of representatives from the Member States. The teams undertake tasks delegated by the Commission which include technical, communications, financial and legal matters. According to the Agreement, each Party is responsible for the costs of attending and participating in the meetings of the Council. The relationship among members of the Technical Task Team allows for a healthy exchange of technical information about the Members States. Council is also able to call upon each of the Task Teams as necessary for reports on any subject under their purview. The structure as it operates demonstrates a high level of support for the organization and a desire for it to succeed. Figure 2.2 shows the current structure of the Commission.

Figure 2.2 Current Structure of ORASECOM



### 2.1.1 Commitment, Trust Building

The survey carried out during the compilation of this report notes that cooperation between Member States in relation to international watercourses has strengthened since the establishment of ORASECOM in 2000. There is a growing political commitment to basin-wide cooperation in water resources management instilled by ORASECOM. Every Member State is willing to participate and officials are released to carry out ORASECOM activities and attend meetings.

*"In charting the way forward for the newly formed basin organization, the ORASECOM Commissioners were quick to identify the need to build confidence as a priority for the Commission's success. The clear commitment on the part of their Ministers had left no doubt that failure was not an option. However they were under no illusions with regard to the challenge before them in trying to make the Commission function properly and yield the desired results. They were aware of the long running disagreement between Lesotho and South Africa on the river hydrology to be applied on the Lesotho Highlands Water Project. They understood that their biggest challenge was to build trust and engender confidence in the new organization among Member States, if they were to succeed. They knew also that South Africa's still recent apartheid past was bound to fuel suspicions of South Africa's motives especially since it already enjoyed a high level of development in the part of the basin within national borders, not to mention the Lesotho Highlands Water Project." –Emmanuel Lesoma, then Principal Secretary for Water (now Principal Secretary for Energy), Kingdom of Lesotho; Khomoatsana\_Tau, founder Member of Council and leader of the Kingdom of Lesotho delegation*

Felix Malachamela from Lesotho adds that, "We should not underplay the achievement attained by virtue of the very existence of ORASECOM. Four countries have been brought together as willing partners to work together and find common solutions to shared challenges. A country like Botswana, whose right to be a member of ORASECOM was originally questioned by some Member States is now considering together with the other countries the possibility of drawing water directly from the highlands of Lesotho."

Tinashe Chizema, from the Department of Water Affairs in South Africa observes that a remarkable sense of family has developed while there is a push for implementation that reflects a sense of ownership and obligation.

Such has been the progress and level of maturity achieved by ORASECOM. According to Andrew Takawira from Global Water Partnership (GWP), “One would wish they could be able to sit around the table where conversations about the development of the resource take place,” he says. In this context, Takawira cautions that issues such as the determination of environmental flows, water quality, climate change impacts and adaptation strategies cannot wait until there is a crisis. Involving ORASECOM early in such discussions is in keeping with and in optimal exercise of its mandate. It matters not whether one is referring to a bilateral project or a basin-wide transboundary project.

Of primary importance to stakeholders is the fact that with the involvement of ORASECOM in an oversight role, all riparian states are likely to be satisfied that due diligence has been done.

Another milestone is an agreement on equal cash contributions towards Secretariat operations and programme requirements.

“By endorsing the Strategic Action Plan, it means you are committing yourself to the plan and support its implementation, be it technical, financial and communication requirements. I think commitment is there. Even the Member States do honour their annual payment. At the end of the year we get a report that all Member States have paid their dues. Whether they pay on time or not is not important. The secretariat is kept operational by the contributions from Member States. The fact that they are able to come this far, 15 years, and are still complying with the Agreement, shows some form of commitment.”-- *Aune Amwaama, Communication Task Team Member, Namibia*

Executive Secretary Thamae points to the fact that the costs of involving scientists in activities such as the Joint Basin Survey are borne by the Member States and not by ICPs. This means that a budget line for ORASECOM has been created in all Member States and that a new core activity is being paid for by them. “This is significant progress”, says Thamae.

### 2.1.2 ORASECOM Attracted Support from ICPs

ORASECOM through its Secretariat has diplomatic status. It has earned trust from cooperating partners and has managed to attract funding from several sources which include Australian Government Overseas Aid Program (AusAID); UKAid from the Department for International Development (DFID); German Federal Ministry for Economic Cooperation and Development (BMZ) through technical assistance from GIZ; European Union (EU); the United Nations Development Programme/Global Environment Fund (UNDP GEF); Directorate General for International Cooperation of the Netherlands (DGIS); and the French Global Environment Facility (FGEF).

“The commission has a good reputation to the outside world. We do not really beg for them to come, we don’t even write proposals in advance, they come and we develop the proposal together,” says one Task Team Member.

A member of the Finance Task Team adds that, “The ability of ORASECOM to source funds from international cooperating partners has been quite tremendous. Even when you look at the books of ORASECOM, they are quite healthy.”

In the early years, two ICPs (FGEF and GIZ) extended remarkable support. The former supported the study that culminated in the 30 actions that were grouped into 6 thematic areas as mentioned earlier. These became the programme guide for ORASECOM to this day. GIZ provided invaluable institutional support that extended to hosting the Interim Secretariat of ORASECOM for almost one year at its offices in Gaborone. This included opening a bank account for ORASECOM in Botswana such that Member States could start making their annual financial contributions even before the Secretariat was established. Other ICPs then came in. A series of ORASECOM-ICP Coordination Workshops were held since 2007. These coordination workshops have become standard practice for ORASECOM, and have improved clarity on the respective roles of all concerned while creating greater

understanding and solidarity between ORASECOM and its partners, and among the partners themselves in line with the spirit of NEPAD.

For several years ORASECOM had as a standard item on its agenda, a brief or update on issues relating to NEPAD, the African Ministers Council on Water (AMCOW), the African Network of River Basin Organizations (ANBO) and other African Water Sector issues. In this way ORASECOM was able to gauge its own progress and relevance in relation to the continental development programme.

With regard to the current funding model in which donors bear a high proportion of the cost of projects and whether this is sustainable, some officials see it as normal for young institutions such as ORASECOM. The main concern is to ensure that the projects undertaken with donor funding are in line with the goals of ORASECOM and thus contribute to the ability to fulfil its mandate. The officials consider it important that Member States continue to carry the costs of running the secretariat and attend Council meetings regularly, as has been the case all along.

Others see the current situation as an opportunity to start thinking of sustainability models as ICPs may not be there forever. "If we sit idle without tackling a potential problem, we might run into serious challenges. It's better we tackle that sooner or later," says Christopher Munikasu, Finance Task Team Member from Namibia.

### 2.1.3 Fostering Peace, Cooperation and Prevention of Conflict

The Commission has been instrumental in fostering peace, cooperation and conflict prevention in the last 15 years. The institutional setup and operations for ORASECOM allows Commissioners to meet regularly to discuss and resolve differences. The Forum of Ministers established in 2011 meets once a year to direct the Commission and review the overall programme of work. The Senior Officials meet once a year to consider the Commission work programme and budget, and prepare submissions to Ministers. The Council meets twice a year to review and discuss progress on the programme of work and budget, to discuss bilateral cooperation projects, and exchange information on national development projects of transboundary significance. Task Teams meet at least twice a year to discuss respective activities of the Commission and prepare technical updates for Council, while the Secretariat oversees implementation of the programme of work and is the corporate arm of the Commission.

"Meeting regularly has helped us to solve many issues. The border dispute between Namibia and South Africa has been solved peacefully through the ORASECOM. That is part of the mandate of ORASECOM to solve disputes. Each country in the commission represents its national interest, but differences have been solved peacefully. At times we agree to disagree and move on," says Elise Mbandeka, Task Team Member in Namibia.

Aune Amwaama, a Communications Task Team Member from Namibia, adds that, "I would say ORASECOM has managed to maintain peace within the basin. We share information and we cooperate in ensuring there is a relationship among the four countries. In this way there is peace and security," she says.

ORASECOM has helped to ease some tensions especially in bilateral relations. While ORASECOM had no influence on the first phase of the LHWP, it had much influence in the negotiations of Phase 2 of the project.

Tau recalls what used to happen before ORASECOM as far as peace is concerned. "At times tensions of the pre-liberation days were given space to play a role. Mistrust was a key factor from the outset that required special attention in the early days of ORASECOM. Technical disparities between the stakeholders on both sides of the Caledon River also played a role."

Tau recalled that, after Lesotho had negotiated the release of water from the LHWP into the Caledon River to benefit drought-stricken lowlands of the country, how little of the water reached its intended destination. Instead the water ended up in South African farms along the way. Caledon River delineates the border between the two countries.

In another example of how the LHWP could not be entirely separated from the ORASECOM, Tau points to the fact that the LHWP has had the effect of reducing Lesotho's freedom of action in areas upstream of the river source. Limitations are imposed by the need for extraordinary attention to maintaining the ecosystem health of the area to preserve the pristine nature of the water for the project. He is of the view that a project of this magnitude should have been treated as a SADC initiative and thus been subjected to SADC approaches. ORASECOM would have been better placed to address the LHWP issues. As things stood, local communities are now being denied access to their natural fuel sources without being offered alternatives. He felt that it was unfair that Lesotho had to bear the responsibility of catchment management and wetlands sustainability on its own. He expressed the view strongly that this ought to be borne equally by the other riparian states.

## 2.2 Establishing a Common Understanding

In the last 15 years, a lot of time was spent in establishing a common understanding among the Member States. ORASECOM has contributed to knowledge generation in a way that was probably unforeseeable to those who established it in 2000. Various key basin-wide studies have contributed immensely in exposing young professionals and government authorities to new areas of knowledge. Basin-wide and national action plans have been formulated on the basis of this new knowledge. The studies and plans developed serve as official reference on scientific information on the basin water resources and issues.

Access to sound and reliable information on the state of the basin is critical in enhancing decision making and sustainable utilization of the basin's resources. For this to happen it was imperative that the four delegations join forces in developing a common, shared information base on all relevant aspects of the basin. As a result of the initiatives, there has been increased knowledge about the basin and this has promoted cooperation and understanding of the Orange-Senqu River Basin. The four countries despite their disparities in size, and irrespective of levels of water resources development or aspirations, have successfully collaborated in identifying and implementing six priority themes constituting a joint programme of cooperation. The six themes are:

- Institutional and Organizational Strengthening;
- Specific Capacity Building on Shared Watercourses Management;
- Development of Shared Information System;
- Enhancing ORASECOM Communication and Awareness Building;
- Specific Transboundary Projects and Studies; and,
- Promotion of Conservation and Environmental Strategies and Policies.

"If we talk about the Orange River system do we actually know what we are talking about, how big is the catchment, what is the runoff, do we actually know what we want to talk about. It was then the issue of the need to carry out studies to understand the resource base first emerged. This is what the last 15 years were about -- a lot of studies to understand the resources." --**Harold Koch**

Functional requirements related to ORASECOM's role in data and information management are included in the Revised SADC Protocol on Shared Watercourses and the ORASECOM Agreement. General Principle 6 of Article 3 of the Protocol states that "Parties shall exchange available information and data regarding the hydrological, hydrogeological, water quality, meteorological and environmental condition of shared watercourses." Several other provisions of this Protocol refer to sharing of data and information, including "timely notification of planned measures accompanied by available technical data and information."

The ORASECOM Agreement tasks the Council to advise the Parties on “the standardized form of collecting, processing and disseminating data or information with regard to all aspects of the river system” as stated in Article 5.2.5. Furthermore, Article 7.4 obliges the Parties to the Agreement to “exchange available information and data regarding the hydrological, hydrogeological, water quality, meteorological and environmental condition of the river system.” In fulfilling these obligations, major milestones have been achieved through the studies and initiatives undertaken by ORASECOM as explained in examples below.

### 2.2.1 Development of Transboundary Environmental Assessment Guidelines

The Transboundary Environmental Assessment Guidelines highlight the issues of concern in the Orange-Senqu Basin, especially how transboundary impacts on the river and associated habitats could foreclose future livelihood and development options. They provide guidance on how transboundary impacts should be assessed, using Strategic Environmental Assessment and Environmental Impact Assessment tools, and advise on how best to design the transboundary consultation process, in the context of notification under the ORASECOM Agreement.

Some officials however expressed regret that there have been instances in which the Parties to the Agreement ignored some of the basic principles such as that of prior notification. There had been instances where some countries failed to respond within the agreed timeframe to notification. This caused unnecessary delays and costs to the notifying state. Lesotho had suffered such a fate when preparing to implement its major water infrastructure project at Metolong. The notifying country does not have the power to compel a delaying Party to comply, nor indeed do the rest of the Member States.

### 2.2.2 Groundwater Review of the Molopo-Nossob Basin

In an effort to increase the base of knowledge on groundwater and due to the increased demand for water expected in future, ORASECOM undertook a groundwater review of the Molopo-Nossob Basin to evaluate available groundwater resources. The Molopo River is an ephemeral tributary of the Orange-Senqu River system. The review involved an exhaustive analysis of the available data and information in each of the Basin States in order to make recommendations on how data can best be shared between countries and integrated.

As Phillip Beetlestone from GIZ says, “We know too little about the dynamics of other groundwater bodies. We don’t know how far they extend, or the quantity and quality of water they contain. How does a particular groundwater resource replenish itself? How much water can we extract without depleting it? How much water can we take from Nossob, Auob or Molopo aquifer without destroying the fragile ecosystems that depend on it?”

Developments which require large quantities of water are foreseen in the Botswana part of the basin, where planned irrigation requires about 6.2 million cubic metres of water per year. Other major water-consuming developments are for the mining industry in South Africa as well as plans for increased irrigation. There is therefore need to know the amount of water available from both underground and surface water sources.

### 2.2.3 Orange-Senqu River Transboundary Diagnostic Analysis

The Orange-Senqu River Basin Transboundary Diagnostic Analysis (TDA) is based on preliminary findings and recommendations of scientific studies adopted by ORASECOM in 2008. The 2014 TDA provides a revised scientific and technical basis



Closely examining obtained samples

for making decisions on how to tackle transboundary issues in the basin. It is aimed at governments, industry, academia, civil society and environmental groups in the four Basin States.

The first step in compiling the TDA was to agree on the transboundary problems and prioritize them. Stakeholder consultations conducted during the preliminary TDA identified major issues of concern in the basin. These included increasing water demands, changes in flow, declining water quality, and land degradation, including the spread of alien invasive species. Loss of biodiversity and the impacts of climate change were considered cross-cutting issues. The preliminary TDA was produced through gathering and interpreting information on environmental impacts and the socio-economic consequences of each problem, and developing preliminary causal chain analyses.

The Orange-Senqu TDA was compiled by a consulting consortium made up of experts from Tethys Environmental Consultants and the Southern African Institute for Environmental Assessment. Funding was provided by GEF through UNDP and guidance as well as supervision was provided by ORASECOM and technical officials from the four basin countries.

#### 2.2.4 Orange-Senqu River Basin Strategic Action Plan and National Action Plans

Another study carried out during the period under review is the Orange-Senqu Strategic Action Programme (SAP). The four-year ORASECOM project, funded by the UNDP GEF and executed by the United Nations Office for Project Services, has assisted the basin to identify principal threats to the water resources and to develop a sustainable programme of reforms, actions and investments to address these. The objective of implementing such initiatives is to contribute to the long-term goal of sustainable development of the Orange-Senqu River Basin.

The SAP therefore aims to ensure that the basin's environmental functions and services are maintained at levels that are adequate to sustain livelihoods and economic development in the light of predicted future population increase, economic growth, rising living standards, as well as the possible effects of climate change. The SAP is closely linked to the corresponding National Action Plan (NAP) of each of the four Basin States, which elaborates project concepts to address transboundary problems at country level.

In the context of the Orange-Senqu River Basin, the SAP and NAPs collectively form the core of the environmental component of the IWRM Plan. The SAP and NAPs are developed for a ten-year planning time-span with targets set for that period.

Like the basin-wide SAP, the country level NAPs were supported by GEF/UNDP to address a variety of identified, water-related environmental concerns. The SAP was developed through an intensive stakeholder consultation process. This involved inter-sectoral dialogue to achieve integration in water resources management and, most importantly, national and basin-wide endorsement. The political and technical guidance came from the four basin countries, through the respective Action Plan/SAP Working Groups as well as from a broader National Stakeholder Platform. Each structure was specifically set up for the purpose of SAP and NAP development. In each country, a delegate to the ORASECOM Technical Task Team was appointed as the national coordinator of the Action Plan/SAP process. The National Stakeholder Platforms comprised of representation of a wide range of relevant role-players, including both state and non-state participants.



Samples were collected from different points of the river

## 2.2.5 Joint Basin Surveys

One of ORASECOM's tasks is to advise Member States on the development, use, and conservation of water resources in the Orange-Senqu River Basin. To do this, ORASECOM has focussed its attention on building a common understanding of the key factors impacting on the river system. The first Joint Basin Survey (JBS-1) was carried out in 2010 and repeated in 2015. Box 2.1 explains what was involved in JBS 1 and 2.

### Box 2.1 Joint Basin Surveys

The intention of JBS-1 was to provide a snapshot of the quality of water resources in the basin in 2010. This served as a baseline against which future improvements can be measured. The survey was the first joint monitoring of the Orange-Senqu Basin supported by all four Member States working together, and will provide assessments for a wide range of water quality, aquatic ecosystem health and ecosystem habitat (hydro-geomorphology) parameters. The planning of JBS-1 was undertaken by a core team made up of two experts from each Member State and supported by specialists from the ICPs. The survey included samples from 50 to 60 sites throughout the Orange-Senqu River System. Its four main components were:

- Aquatic Ecosystem Health (AEH) to assess the state of aquatic ecosystems based on the species found;
- Persistent Organic Pollutants (POPs) and Metals Survey to assess the presence of pollutants which may affect human health even when in low concentrations;
- Water chemical and biological quality to assess the impacts of major pollution sources on the system; and
- Inter-laboratory benchmarking process to help laboratories in all the countries establish quality-control procedures.



Team of experts undertaking water quality monitoring

The second Joint Basin Survey (JBS-2) of the quality of the water resources being undertaken in 2015 continues this spirit of co-operation. It is the second in the series of five yearly comprehensive surveys of the water resources quality of the basin.

It should be noted that the clearest impacts on human health may well be associated with the POPs component of the survey. Such surveys, and the results, as well as associated follow up actions, have a direct impact on communities that live within the Orange-Senqu Basin. This fulfils the project's primary objective by improving the quality of life, reducing morbidity and mortality, contributing to socio-economic development, and to poverty reduction.

Andrew Takawira of the Global Water Partnership cites the ground-breaking work undertaken by ORASECOM within the regional context. He acknowledges the contribution by the annual test of the hydrological model and the five-yearly Joint Basin Survey exercise and research, to building a common understanding of the dynamics of the basin. Takawira believes that water security is likely to become an issue of critical importance in the basin as a result of factors such as increased demand, the possible impacts of climate change, and pollution. Through approaches such as laboratory benchmarking and the standardisation of methodology derived through practice, basin scientists have systematically built confidence in the tools at their disposal to identify possible hotspots and also recommend approaches aimed at enhancing water security where possible. This joint training places ORASECOM in a stronger position to provide scientifically derived and mutually validated advice to the four Member States in fulfilment of its mandate.

Some Member States however lament the need to speed up capacitating the locals in all aspects of water quality monitoring. “We rely on foreign consultancies. We have local people with basic skills. They just need to be taken to another level. We should not be limited to participate in the surveys because we don’t have capacity, as if we are not interested. We are keen to learn. We want to carry out the surveys on our own,” says one Task Team Member from Namibia.

### 2.2.6 Orange-Senqu Basinwide Integrated Water Resources Management Plan

In view of the existing and possible future developments which will influence the availability of water in the Orange-Senqu River, an IWRM Plan was initiated by ORASECOM involving all Basin States.

The main objective of the IWRM Plan is to maximize benefits from the Orange-Senqu River Basin, harmonize developments and operating rules, promote peace in the region and prevent conflict, as well as to encourage effective practices for disaster risk reduction. The purpose of the IWRM Plan is to ensure that developments in the basin are sustainable and take into account the need to protect ecosystems.

### 2.2.7 Benguela Current Large Marine Ecosystem

Another study focussed on the interaction between the freshwater system of the Orange-Senqu River Basin and the 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 requirements for ephemeral rivers and for estuaries. The project included a monitoring programme, covering two hydrological cycles at several sites. This research project contributes 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.

Several studies were undertaken for deeper understanding of the nature of the resources in the basin. For example, the study to determine ecological flow helped to understand how much water should reach the river mouth. “If the Ramsar site is to be maintained, how much water should be extracted upstream, and how much must flow through for the ecology. A lot of water was taken out at the detriment of the environment. Nobody knew and could only guess how much should be maintained. Now it is being determined,” says Koch.

Other initiatives include the feasibility study for the proposed Noordower/Vioolsdrift Flow Re-regulation dam conducted in 2014 to 2015 and the rehabilitation of highland wetlands to improve sustainable use in the Khubelu catchment of Lesotho. The projects demonstrated advantages of cooperation across sectors, multiple stakeholders and community-based organizations. The studies removed suspicions among the Member States as they now had a common understanding of the causes and results of certain actions affecting the river system and the entire basin.

## 2.3 Capacity Building of Member States through ORASECOM

Through its capacity-building initiatives, ORASECOM has equipped its stakeholders with skills and knowledge on water resources management over the past 15 years. As a result, there is growing confidence among stakeholders in responding positively to the problems they face in their communities. ORASECOM has undertaken capacity building through commissioning a number of training courses related to water resources management.

In 2009 for example, ORASECOM commissioned a course on International Water Law which provided ORASECOM staff and representatives of Member States with a deeper understanding of the rules and principles of international water law and how to contribute to making informed decisions about the basin.



Participants following proceedings of the workshop

Another course on negotiation skills and conflict management undertaken in 2010 provided participants with knowledge of key principles of cooperation and negotiation as they pertain to ORASECOM. According to some officials interviewed, what is now required is the evidence of the skills gained in negotiating projects in the basin as well as at regional and international levels.

ORASECOM has provided a platform for knowledge transfer through facilitating the Look-and-Learn visits. “We had an opportunity to learn from Botswana and South Africa regarding how to deal with *Prosopis*, an invasive species which has spread over the lower part of the river,” says Rennie Chioreso Munyanyi from Desert Research Foundation in Namibia. “ORASECOM made it possible for us to get to know who is doing what.”

While stakeholders recognize the effort by ORASECOM to build capacity in various skills, there is need to expand this further. “At times capacity building is so abstract and not relevant to the day-to-day work of the communities. There is need for appropriate capacity building at community level,” notes Nico Willemsen. “A lot of capacity building has been done in science skills, and sometimes it gets stuck there. We need people that transfer the science into decision making.”

Other trainings carried out by ORASECOM in the past 15 Years are shown in Box 2.2.

### Box 2.2 Training Courses

#### **Training on International Agreements that may Influence the Basin-wide Plan (2010)**

Officials from Basin States were exposed to the detail of international commitments made by their governments. This included examining the provisions of the Southern African Customs Union, Transfrontier Parks agreements, the Southern African Power Pool, as well as global conventions directly pertinent to water resources management, United Nations Convention to Combat Desertification (UNCCD), Convention on Biodiversity, United Nations Framework Convention on Climate Change, and Ramsar Convention on Wetlands of International Importance.

#### **Training on Water Resources Yield Simulation Models (2011)**

This provided an introduction for senior decision-makers to know about the simulation model for basin-wide water availability developed for the whole basin.

#### **Training Course on Aquatic Ecosystem Health Monitoring and Assessment (2011)**

This training for delegates from Basin States was an EU-funded project to improve trans-boundary water management in the Orange-Senqu River System with the objective of ensuring the economically, socially and environmentally sustainable use of the water in the basin. A key aspect is to strengthen the ability of ORASECOM and Basin States to effectively monitor the status of the River.

### 2.3.1 Institutional Strengthening

A Delphi process was conducted to identify the strengths and weaknesses of ORASECOM with the intention of strengthening the institution. Delphi is an interactive forecasting method based on expert opinion. Experts in each of the Basin States were asked to identify the role and function appropriate to ORASECOM within the overall IWRM plan.

The results pointed to several issues which were not provided for by the Agreement. One of the identified gaps was that of Ministers, not mentioned anywhere in the Agreement, yet they make the final decisions. A forum of Ministers has now been formed since 2011. The Ministers Assembly consists of four selected Ministers, one from each Member State. They meet once a year to review progress on programme delivery and provide political guidance and direction to Council. The assembly is a platform to ensure endorsement for ORASECOM from the respective Member States. Senior Officials meet once every year to consider the Commission's work programme and budget, and prepare submissions to the Ministers.

The legal Task Team has been tasked to draft the revisions of the Agreement. "Other issues to be considered in the revision are the need to define the roles and organs of the Commission," says one of the Legal Task Team members.

"The Council made up of senior officials is just a technical advisor, and needs to play a more pertinent role, including not only advising but dealing with policy formulation and strategic planning to afford Ministers the opportunity to make informed decisions."

One of the weaknesses identified in the Agreement was that it provides significant latitude in its interpretation of the purpose and structure of ORASECOM. This has resulted in differing interpretations and perspectives between and within delegations. Specifically, the Agreement does not recognize the Commission as distinct from Council, while the distinction between parties and delegations is not clear. People are appointed to the Council and Task Teams by the Member States, whilst they have other responsibilities, often with inadequate resources to effectively contribute to the Commission, which continues to constrain ORASECOM's functioning.

Other areas to be considered in the revision of the Agreement are the need to establish additional committees for specialised issues, according to the views of several stakeholders interviewed. One cited example of issues to be considered is underground water. Interviewees felt that this was left out yet it is very important as far as the basin is concerned.

Another requested committee would have the task of integrating the various committees. The chairs of different committees would meet to share the status of their respective sectors to avoid working in silos.

The need to expand the Secretariat to ease the increasing workload is also an area being addressed. An institutional review for the Secretariat was carried out in 2014, following the Delphi process in 2011. The results suggested that the current lean team is being overworked. Key additional posts being considered are a Communications Specialist and a Project Management Specialist.

The former would be responsible for the maintenance of the ORASECOM website and the River Awareness Kit (RAK), the preparation of newsletters and other information materials, organization of events, and liaison with the Communications Working Group. This person would also maintain oversight of any assignments dealing with communication and awareness raising. The latter post would be responsible for ensuring that Parties undertake the AEH and transboundary monitoring as planned, and would collate the data, set this against the trigger values and report to the Programme Committee in this regard. This person would also plan and manage the five-yearly, Joint Basin Surveys, as well as manage the Water Information System.

The need to have substantive staff for these two posts was reiterated by officials during the consultations for the production of this report. Jeffer Sakupwanya welcomed the need for a Communications expert in the ORASECOM Secretariat structure. He feels that the proposed position should go a long way in generating awareness of the existence of ORASECOM among the riparian states, and also in building a sense of belonging among the citizenry. Sakupwanya said that with proper guidance, this could open new vistas, especially among the youth.



Stakeholders also noted the need for national seconded staffing in the areas of hydrology, legal and policy analysis, water resources management, and monitoring and evaluation. This has the additional benefit of ensuring that Member States bear and share the responsibility of sustaining the Commission as well as demonstrating ownership and exposing young professionals to new areas of knowledge and experience.

Concerns were raised that the Commission should have power to deal with equitable sharing of water as well as loss of water. A mechanism/guidelines for equitable sharing of water resources could be set to avoid the current situation where one country benefits more than the others. ORASECOM should be able to monitor who is getting what and set limits to allow equitable sharing of the resources in the basin, at least the water resources. Some respondents felt that ORASECOM should be able to deal with the loss of water through leaking pipes, dripping taps and illegal extractions. However, others felt this is the responsibility of national water utilities.

## 2.4 Influence of ORASECOM on National and Regional Policies

Basin States have recognized the value of their water resources over the years by putting in place regulatory instruments and institutions responsible for managing the resources. Policies and strategies at national level and transboundary arrangements are in place. Most of these initiatives predate the concept of ORASECOM as a regional transboundary institution. The Commission continues to enhance and support pre-existing national and regional initiatives, and in many cases bilateral arrangements have benefited from ORASECOM's concerted efforts for basin-wide cooperation.

The National Action Plans (NAPs) were developed through an extensive consultative process to ensure that they are aligned to existing institutional arrangements, national policies and plans from Basin States. The NAPs address socioeconomic and environmental issues. The remaining challenge is implementation of these plans.

"If each country owns up to the implementation of NAPs, this will take ORASECOM to another level in the next five years", says one Communications Task Team Member in Namibia. "My worry is we are good at developing plans, but when it comes to implementation, there is a challenge," she adds. This perspective is supported by Nico Willemse from UNDP who says, "A lot of planning has been done. Implementation of the plans would be the true test of ORASECOM work."

While bilateral arrangements established before ORASECOM will continue to exist, they are now compelled to liaise with ORASECOM plans. Piet Heyns recalls what used to happen prior the Commission. "Before ORASECOM, everybody was operating in silos, each country was doing its own thing. If there are specific projects that have to be done between the bilateral commissions, they would not inform others. This is now formalised. The countries now inform others through ORASECOM."

Countries are making efforts to revise their water policies to bring them in line with the provisions of the ORASECOM Agreement as well as Revised SADC Protocol on Shared Watercourses. The main legal instrument governing water resources management in Botswana is the Water Act 34 of 1968 and the country is in the process of reforming its water law. A new draft Botswana Water Bill is in place and it contains provisions on water resources management as well as pollution control. In recognizing IWRM principles, it creates a new institutional set-up for water management in the country, including the involvement of stakeholders. In line with the ORASECOM Agreement and with the Revised SADC Protocol, it also includes reference to Botswana's rights and obligations resulting from international agreements related to water.

To align national water legislation to the ORASECOM Agreement, Lesotho embarked on a process to reform its water resource legislation. To this end, the Lesotho Water Act which recognizes Lesotho's international obligations relevant to water as well as the need to protect wetlands and natural springs came into force in 2008. This also establishes a new institutional framework for water management, including establishment of Catchment Management Agencies.

In Namibia, water resources management legislation is largely confined in the Water Act No 54 of 1956. This Water Act has since been repealed and replaced by the Water Resources Management Act No. 24 of 2004. The new water act is in line with the provisions of the ORASECOM agreement as well as the Revised SADC Protocol on Shared watercourses.

In South Africa, the new National Water Act was enacted in 1998, replacing the Water Act 54 of 1956. The Act, in combination with the National Water Resources Strategy, establishes a detailed framework for water resources management in the country. Based on the principles of IWRM, the Act stipulates the gradual devolution of water resources management responsibilities to Catchment Management Agencies and Water User Associations. Section 2 (i) of the National Water Act recognizes the need to meet international obligations relating to shared water resources. This provides South African water resources management authorities with the means to enforce international obligations domestically and comply with obligations resulting from international agreements. The Act further contains specific provisions empowering the Minister to establish bodies to implement international agreements.

ORASECOM provides a joint platform where basin countries meet, discuss and agree on common issues affecting them. For the past 15 years ORASECOM has contributed tremendously in harmonising policies and initiatives of the Member States. Reginald Tekateka, a former ORASECOM Commissioner for South Africa, notes that the early ratification of the Protocol and signing of the ORASECOM agreement by the four Member States opened the door for harmonization with SADC guidelines and for the Commission to influence other SADC countries by example. "For a country as economically dominant as South Africa to have both championed and agreed to the terms of the Agreement, could not have gone unnoticed," he says.

"If you look at transboundary level, the whole issue of having an open ear and understanding your partners and not only looking at your own interests is very prominent in ORASECOM. ORASECOM is really an organ for the interests of the basin and secondly for the interests of the countries represented." —Harold Koch, former Commissioner

A cross-border water security initiative in which South Africa is supplying water to Middlepits Cluster Villages in Botswana is a good example of cooperation between countries as a result of ORASECOM. "The relationship that now exists between Botswana and South Africa, where South Africa supplies water



Middlepits Cross Border Water Initiative sharing water in a traditional clay pot, a vessel which describes the African heritage and its associated cultural spirit of sharing, and symbolizes unity and cooperation.

to south eastern Botswana, exists as a result of the fact that Botswana is a member of ORASECOM. This is unlikely to have happened otherwise," says Mr Khupe Khupe, Former Director of Water Affairs in Botswana and founding Head of International Waters. Mr T.G. Dedede, deputy Permanent Secretary in Botswana, adds that, "The prospect of directly accessing water from Lesotho would not have been imaginable without the new dynamics that have been created within the basin through the establishment of ORASECOM."

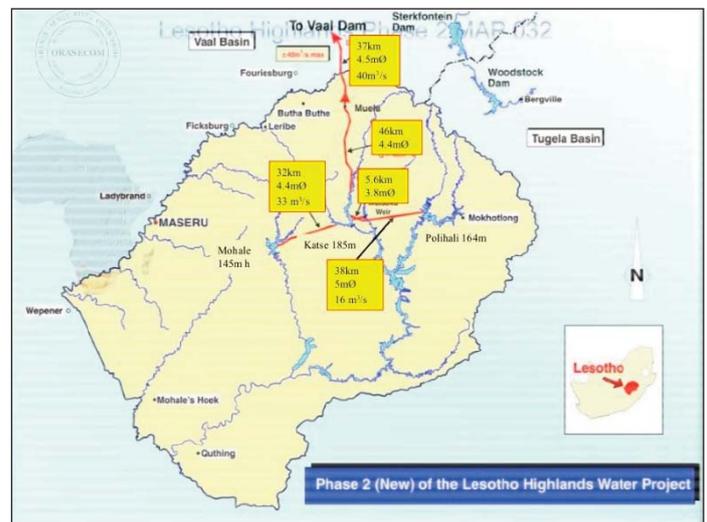
"Fruits of the cooperation that can be ascribed to ORASECOM's existence are already evident," says Tracey Molefi, Head of International Waters Division, Botswana. "By virtue of their common membership of the basin organization it has been possible for Botswana to express her interest and even begin the process of possibly drawing water from the Lesotho."

She is quick to add that while they might not necessarily reap equal benefits owing to geographic location and level of development among other things, it is still worth the effort to maximise the benefits for all. "It will indeed take time to reach the level whereby we can achieve more equitable use of the resource," she says.

While Phase 1 of the LHWP was designed before ORASECOM, the Commission influenced the planning of Phase II of the project. Notification of planned projects to other Member States is facilitated by ORASECOM. The Commission has the mandate to ensure EIAs are carried out and shared with all Member States according to the Environmental Assessment Guidelines developed for such initiatives.

Phase II, entails the construction of the Polihali Multipurpose Dam on the Senqu River. This initiative is for transfer of water to Katse Dam through 38 km of tunnels and supporting infrastructure, to increase Lesotho's Muela Hydropower Complex capacity, and augment water supply to Gauteng and the Vaal River supply system in South Africa. Fig 2.3 shows the LHWP Phase II.

Figure 2.3 Lesotho Highlands Water Project Phase II



## 2.5 ORASECOM's Cooperation with other River Basin Organizations and Relevant International Institutions

Cooperation between ORASECOM and other river basin organizations and shared water institutions has been increasing over the past 15 years. Exchange visits have enabled ORASECOM to share ideas and practices, and learn from other institutions. For example, the visit to the Mekong River Basin went a long way in forming the minds of the ORASECOM delegates with regard to the kind of Secretariat they wanted to have. They were not impressed with the rotating Secretariat of the Mekong whereby it was located in one of the Basin States, changing every few years. The general feeling was that the system was a rather destabilising approach that seemed to perpetuate mistrust among Member States.

Some of the exchange visits were with the International Commission for the Protection of the Danube River (ICPDR), Niger, Nile, and Volta River Basin.

"Twinning arrangements with the Danube has made it possible for Botswana to take young schoolchildren to the Danube basin to learn from practices of inculcating the culture of water conservation into the lives of the citizenry." -- **Thatayaone G. Dedede, Deputy Permanent Secretary, Botswana**

From these visits ORASECOM learned that sound political leadership is a pre-condition to the appropriate functioning of RBOs. These visits have put ORASECOM on the map as it is a well-known river basin globally.

“What I know now is that if you go to international conferences everybody knows about ORASECOM. Everybody sees ORASECOM as a role model. The work that has been done is being recognized as an example to follow.” —**Harold Koch**

Box 2.3 presents some of the exchange visits undertaken by ORASECOM.

### Box 2.3 Exchange Visits

#### ***ORASECOM Visit to the ICPDR***

A delegation of four people from ORASECOM visited the International Commission for the Protection of the Danube River (ICPDR) based in Vienna, Austria in July 2009. The visit formed part of ongoing cooperation between ORASECOM and the ICPDR, and was supported by the EU. The primary focus of the visit was to exchange experiences on joint multi-national water resource quality-monitoring programmes, as well as to engage the ICPDR on stakeholder communication. ORASECOM had an opportunity to learn about information management systems in ICPDR; public awareness programmes including the Danube School Box Project; water quality management programmes and monitoring networks of the ICPDR; the type of agenda used for ordinary meetings of the ICPDR; and how the meetings are conducted, including adoption of resolutions by the ICPDR Commissioners.

#### ***ORASECOM Visit to Dakar, Senegal***

In February 2010, ORASECOM visited the Senegal River Development Organization based in Dakar. The purpose of the visit was to exchange ideas and experiences relating to the development and management of transboundary river basin organizations using the Senegal and the Orange-Senqu River Basins as case studies. This also supports the African Network of River Basin Organizations (ANBO)'s role in facilitating exchange of ideas and experiences.

#### ***ORASECOM Visit to Kyoto, Japan, Delft, Netherlands and Mekong Commission in Cambodia in March 2003***

With support from GTZ, representatives of ORASECOM and the Limpopo River Basin Commission (LIMCOM) visited Kyoto, Japan during the World Water Forum. The trip included a visit en route to the IHE in Delft, Netherlands, where Commissioners participated in a two-day seminar on Transboundary Water Resources Management; and then to Cambodia where the Secretariat of the Mekong River was located at that time.

#### ***Visit by Niger Basin Commission***

In March 2010 the ORASECOM Secretariat hosted a delegation from the Niger Basin Commission. The delegation visited the Vaal Dam and the Rand Water treatment plant in South Africa, the Lesotho Highlands Development Authority, the Katse Dam and the Muela hydropower station in Lesotho. These visits provided opportunities to share the work being undertaken in ORASECOM and to learn from each other's experiences.

#### ***Visit by the Nile Equatorial Subsidiary Action Plan Group***

In May 2010 the Nile Equatorial Subsidiary Action Plan, an investment arm of the Nile Basin Initiative (NBI), conducted a study tour to both the ORASECOM Secretariat and the Komati Basin Authority.

#### ***Visit by the Volta Basin Authority to ORASECOM***

A high-level team comprising of Commissioners and Secretariat staff of the Volta Basin Authority visited ORASECOM in February 2011 to share experiences. ORASECOM learned from the Volta Basin Authority's Transboundary Diagnostic Analysis project. The Volta Basin Authority drew from ORASECOM's experiences with the Joint Basin Survey, taking with them video materials and ideas for possible similar exercises in the basin.

#### ***Benguela Current Commission***

A workshop with representatives from ORASECOM and the Benguela Current Commission, and other key stakeholders was held in Windhoek, Namibia in 2010 to discuss major interactions between the Orange-Senqu River Basin and the Benguela Current Large Marine Ecosystem, based on a review of relevant scientific literature and data compiled under the TDA and SAP.

## 2.5.1 Participation at SADC RBO Workshops, SADC Water Weeks and African Water Fora

At regional level, ORASECOM continues to network with partner RBOs including LIMCOM, Permanent Okavango River Basin Water Commission (OKACOM) and the Zambezi Watercourse Commission (ZAMCOM).

ORASECOM actively participates in SADC RBO workshops and SADC Multisector Water Dialogues, both held at two-year intervals. These events bring together key players in the water sector in southern Africa, including RBOs, government departments, civil society, research organizations, and ICPs. ORASECOM participates through seminar presentations as well as exhibitions. These present an opportunity for the Commission to interact with other RBOs and share ideas, expertise and best practices in addressing common challenges.



ORASECOM exhibits during the 4th SADC RBO workshop.



ORASECOM participating in the Africa Water Week.

“Such events not only provided an opportunity for ORASECOM to renew ties with its sister RBOs in Africa through the ANBO, but also to share experiences,” says Motake Mojakisane. It is through such kinds of events that ORASECOM has established itself as one of the foremost RBOs in Africa.

Andrew Takawira expresses his opinion that the progress achieved by ORASECOM both in content and in the depth of cooperation sets an example for the other river basin organisations in SADC and beyond.

Dr Sakupwanya concurs with this view and refers to ORASECOM as the “elder brother to RBOs in southern Africa, who leads by example”.

He pays tribute to the riparian states for their exemplary show of political will to see the Commission’s vision realised and for their joint commitment as manifested in different ways.

## 2.5.2 Participation at International Water Fora and Events

In addition to SADC and African forums and events, ORASECOM is actively involved at global level through participating in World Water Weeks as well as other water-related seminars and events. The ES always attends the annual World Water Week in Stockholm. Six representatives of ORASECOM attended the 13th River Symposium in Perth, Australia in October 2010. The team comprised of Othusitse Katai, Solly Mabuda, Peter Nthathakane, Luther Rukira, Rapule Pule, and Gavin Quibell, representing among them all of the Member States. This team presented four oral papers and one poster paper in both the Plenary and Side events.

## 2.6 Impact of ORASECOM to Society on Transboundary Cooperation and Management

The greatest benefit gained by the people of the Orange-Senqu River Basin through the existence of ORASECOM is the increased access to water for both domestic and industrial use within their different societies. In the semi-arid regions of Namibia and Botswana, water is considered a scarce resource. Establishment of the Commission has enabled these Basin States to provide water to their people through cooperation with others. The Orange-Senqu River Awareness Kit notes that supply of drinking water had improved significantly by the year 2008 with Botswana recording a coverage of 95 percent, up from 93 percent in 1990. Coverage in Lesotho and South Africa rose to 85 percent and 92 percent, up from 61 and 92 percent, respectively; while Namibia had a sharp increase from 57 percent at Independence in 1990 to 91 percent in 2008.

### 2.6.1 IWRM Demonstration Projects in Communities

Over the past 15 years, ORASECOM has continued to ensure that communities in the Orange-Senqu basin benefit from utilizing the basin's water resources. To this end several projects have been implemented, including those planned under the Orange-Senqu Strategic Action Programme.

Below are some of the community projects implemented in the Orange-Senqu Basin with significant positive impacts on livelihoods.

#### Rangelands Rehabilitation in Mount Moorosi, Lesotho

Communities in the four villages located in the Mount Moorosi area in Lesotho participated in the rangeland rehabilitation project. Activities included construction of physical barriers on the mountain slopes to slow runoff, trap sediments and promote infiltration. The project also involved physical removal of alien species, sowing grass on bare soil, and allowing grasslands to recover by minimizing grazing.

At project handover, the rehabilitated and rested rangelands had some good vegetative cover and regeneration of palatable grasses. The silt traps built to reduce the rate of runoff as well as the removal of invasive bushes has had very positive impact in reducing soil erosion and restoring the rangelands. The pictures below show the improved condition of the rangelands at Ha Sekhonyana.



The handover was done in the middle of the winter, when most plants were dormant and could not be seen. This means the same area had potential for more flora and fauna in summer.

“We have seen restoration of the environment. The grass is coming back. Those rocky patches where we removed the invasive bushes are now getting covered. The wildlife, the birds and animals that were almost extinct in this area are back, some of which the children had never even seen. We are seeing our piece of land actually reminding us of the past, which means things are getting back to normal, so to us it’s a very big improvement to this area.” – **From Ha’Mantsoepa project participants**

This suggests that the rehabilitation and proper management of the sites have had some positive impacts on restoration of biodiversity.

Other income-generating projects introduced at Mount Moorosi include Koekoek chicken breed, which is an excellent free-ranging bird for meat and egg production, even with poor or limited feed; and the production of fodder on marginal cropping lands to supplement feeding of livestock as well as to control soil erosion.

“We noticed the area being eroded and did not know what to do. Through this project we have been able to stop the rate of soil erosion. Not only that, but before the Koekoek intervention, we did not have easy access to eggs as a source of protein. But now, our households have immediate benefits. We eat the eggs and some of us have even been able to breed the Koekoek, using our indigenous chickens.” – **Ha Sekhonyana project participants**

The improved breeding stock of Merino rams and Angora buck have been provided to livestock owners at the demonstration sites. This has been done to expand the hereditary quality of livestock to increase the yields of animal products. Livelihoods of people around the project area have significantly changed with the support from the project. The demonstration project has opened doors for networking and integration with similar projects being conducted in Lesotho. The initiative has provided an opportunity for involvement in other integrated water resources management initiatives as well as national and basin-wide action plans.

#### **Potholing and Keyhole Gardens in Lesotho**

An initiative known as potholing was introduced in Maseru and this has increased production of different agricultural crops. More than 3,000 families have been practising this farming method which conserve soil and store moisture for the plants. Another initiative for the production of nutritious vegetables at the homesteads level, common with Basotho, is keyhole gardening. The small gardens are raised hip-high and fringed by stones which protect them from livestock, winds, and flooding. This has seen the production of vegetables at people’s homesteads with great nutritional value.



### Community-based Rangeland Management and Rainwater Harvesting in Southeastern Botswana

The demonstration project was started in 2011 as part of the Orange-Senqu Strategic Action Plan, at the request of the Government of Botswana. The project addressed rangeland management through a number of cross-sectoral activities and initiatives, including sand-dune stabilisation and tree planting, rainwater harvesting, as well as introduction of alternative income-generating opportunities.

To curb the water scarcity and promote rainwater conservation in the Kgalagadi area, rainwater harvesting became an initiative that led to the rehabilitation of three water cisterns holding 30,000 litres each. These have been completed and handed over to the community. Similarly, in Khawa, a 46,000-litre underground ferro-cement rainwater harvesting tank was constructed and used to irrigate a community vegetable garden.

The demonstration project included backyard vegetable gardens at the community hall that utilize harvested rainwater from this project and derive economic benefits to people in Khawa village.

Furthermore, Karakul sheep farming has been introduced to the area by experts from Namibia. "One breed of sheep can sort out the entire community for a year and divert some income to others things," says Nico Willemse, one of the experts. Initiatives in Khawa, have provided a model for the district, and expansion of the project to other villages is being considered.



### Bokspit Integrated Water Resources Management Project – Botswana

This initiative draws on the lessons learnt from similar projects implemented within the river basin, such as the community-based rangeland management project in south-eastern Botswana. The Bokspit IWRM project aimed at promoting meaningful community participation in planning and management of local water resources. The project involved all key stakeholders in the community ranging from government officers, school teachers, women and children, to traditional leaders. The community had an opportunity to map and audit their own water resources, identify problem areas and propose possible interventions. This process enabled them to gain deeper insights and knowledge on how to better manage their local water resources. The planning processes in Bokspit illustrated what can be termed "learning by doing" as an effective approach to incorporating multi-sectoral participation in IWRM at local level, according to the ORASECOM Newsletter of 2014.

### Transfer of Water from Orange River to Middlepits Villages

Communities in Botswana benefited from the cross-border initiative at Middlepits villages. Cattle ranging, sheep and goat rearing have become common among the Batswana in very large ranges which have access to the water transfer by the ORASECOM hence improving people's diet and market products.

### Khubelu Sponges Project – Lesotho

The project, financed through the Transboundary Management in SADC programme and coordinated by ORASECOM, seeks to achieve the goals of the Lesotho National Wetlands Conservation Strategy 2013/2014 – 2017/2018 through protection of wetlands and promoting sustainable land and water management strategies. The objectives of holistic management included introducing rotational grazing, systematic herding and capacity-building strategies for local farmers and their herders. Conventional grazing patterns in the Lesotho Highlands are known to allow stock to graze palatable grasses in an uncontrolled way, leading to loss of soil nutrition and the inability of nutritious grasses to re-establish. Holistic management, however, requires stock to be grazed in herds that are moved in patterns through a series of paddocks, pre-determined by a grazing regime agreed through participatory planning with relevant farmers groups.

### Improving Water Management in the Irrigation Sector in Namibia and South Africa

This UNDP-GEF-supported demonstration project tested a number of different management approaches and technologies to assist in developing a water management plan. The project team worked with farmers in Noordoewer and Vioolsdrift, and the Joint Irrigation Authority (JIA) responsible for the shared irrigation scheme in this part of the lower Orange River. The objective of the demonstration project was to contribute towards better managed irrigation demand in the basin, economic use of water and improved pollution control in the irrigation sector. Activities included installation of equipment allowing improved irrigation scheduling, and training sessions and study tours with farmers to irrigation schemes in other parts of the basin so as to encourage water demand management and water conservation practices. A water management plan is being drafted for this relatively small irrigation scheme, which will be updated by the farmers and JIA on an annual basis. The project has so far managed to identify major water management issues that should be addressed to achieve the long-term goals of this irrigation scheme. The best practices and water management plan adopted are likely to serve as a valuable guideline for other small schemes in the basin.

### Wetlands Conservation

Demonstration projects and workshops conducted through the facilitation of ORASECOM have contributed to the conservation of wetlands which are surrounded by communities in the basin. Of particular mention are the wetlands at the mouth of the Orange-Senqu River that have been under threat due to high levels of pollution from upstream. The Commission is making efforts to raise awareness on the impact of polluting water resources. The issue of wetlands pollution is being treated as a basin issue. This concurs with some stakeholders in Lesotho who felt the responsibility of catchment management and wetlands sustainability should be a burden borne equally by the other riparian states.



A wetland from Matote River, Lesotho.

## 2.7. Stakeholder Awareness, Communication, and Information Sharing

### 2.7.1 Engagement of Stakeholders in the Past 15 Years

In the past 15 years of ORASECOM's existence, stakeholder participation has been prioritised and strengthened. This is in line with Article 5.2.4 of the ORASECOM Agreement which states that, "Council shall recommend or advise Parties on extent to which inhabitants (stakeholders) in each territory shall participate in planning, development, utilization, protection and conservation of the river system."

Similarly regional policies and strategies such as the Revised Regional Indicative Strategic Development Plan (RISDP) and the RSAPs have underscored the importance of stakeholder participation.

The stakeholders in this context include the ORASECOM structures, water utilities, SADC Water Sector, communities living in the basin, community-based organizations, water and environment related non-governmental organizations, all water users, in both government and private sector, other RBOs, ICPs and international water-related institutions. Member States are mainly represented by departments of water affairs, municipalities and water services authorities, and catchment management agencies.

#### ORASECOM Roadmap towards Stakeholder Participation

To strengthen engagement with stakeholders, a guideline document was necessary for ORASECOM. Anton Earle, who was engaged as a consultant by the German aid agency InWENT in a BMZ-funded project, recalls the process of developing the ORASECOM Stakeholder Participation strategy.

"This was ORASECOM's first step in implementing a directive by Ministers to develop a strategy. The approach followed was one which avoided a consultant-generated blueprint in favour of having ORASECOM delegations themselves, including members of Council, articulate the purpose of the strategy and what the end product should look like. What emerged quite quickly during the three-day strategy development process was the complexity of the ORASECOM stakeholder profile. This realisation led to the decision to settle for a Stakeholder Participation Roadmap rather than a strategy." – **Anton Earle**

The roadmap produced in 2007 emphasises the development of widespread information and dissemination mechanisms which ensure basin-wide outreach in formats that are easily accessible. Information needs of different stakeholder groups and means of accessing it were taken into account. The roadmap includes establishment of national and basin-wide forums. Member States are at different levels in terms of national stakeholder forums.

Box 2.4 explains the various stages in each of the four riparian states. One of the objectives mentioned in the stakeholder roadmap is to build and strengthen capacity in Basin Forums to effectively participate in decision-making, planning and sustainable co-management of the Orange Senqu River Basin. Meanwhile, ORASECOM is making use of National Working Groups (NWG) and Regional Working Groups (RWG) on specific projects in the basin. The NWGs comprise 15 - 30 stakeholders at the national level, with a more limited 7-10 stakeholders from each country represented on the RWGs. These engagement bodies were put in place for the ORASECOM Transboundary Diagnostic Analysis/SAP process and for the purpose of continuity this approach was carried through in the development of the IWRM Plan.

## Box 2.4 Stages of Stakeholders Forums in the Riparian States

In Botswana, no national forum is yet in operation. Instead, there have been a number of local forums established, based around projects. For example, the UNDP Rangelands Project has tapped into existing stakeholder forums established initially through IUCN and EU projects. Recommendations are that the ORASECOM staff could attend and participate in these forum meetings to raise water and groundwater issues on largely terrestrial focussed agenda and then possibly raise ORASECOM issues on the agenda of these forums at relatively small cost to ORASECOM or the Member State.

In Lesotho for example, a single forum, the Lesotho Country Water Partnership, has been established covering the whole country. The Forum is already active and holds meetings with stakeholders. Some key recommendations given are to use the Lesotho Country Water Partnership as a platform for stakeholder participation in ORASECOM.

There are two stakeholder participation forums operational in Namibia — the Orange-Fish Basin Management Committee and the Nossob-Auob Basin Management committee. Both of these management committees meet and have active sub-committees. It is recommended that building the ORASECOM stakeholder participation into the agenda of the committees would provide a relatively affordable opportunity to co-ordinate and to discuss ORASECOM-related stakeholder issues.

There is no single national stakeholder participation platform in South Africa for IWRM in the Orange-Senqu Basin. South Africa is in the process of establishing catchment management agencies, but is struggling to effect these plans. The costs associated with the national level stakeholder participation mechanisms and processes are extremely high and logistically complex, and as a result, the establishment of forums is taking time. Nevertheless a number of civil organizations and interest groups involved in water quality, quantity and integrated water management issues have already been established and could provide the entry point for establishing a national stakeholder participation platform in South Africa.

## Stakeholder Analysis

The Stakeholder Analysis is another study that has been undertaken to help to understand how stakeholders can better participate. The study recommended a three-step approach highlighting a number of critical areas that need attention, including creation of awareness of ORASECOM's roles and responsibilities, aligned with the communication strategy; establishing national participation structures within each Member State linked to the development of the basin-wide plan; and establishing a basin-wide advisory committee.

The Stakeholder Analysis report highlighted the considerable levels of participation within the Orange-Senqu River Basin over the years, which are now at various levels. Participative structures come and go as projects are started and completed, and as issues arise and are solved.

For instance the IWRM demonstration projects have involved stakeholders at different levels. One good example is the Bokspit project in Botswana which involved all key stakeholders in the community, ranging from government officers, school teachers, women and children, to traditional leaders. The community planning process in Bokspit lasted three days and involved the use of participatory methods such as focus group discussions, debates and mapping. This process enabled them to gain deeper insights and knowledge into how to better manage local water resources.

Exchange visits with other RBOs have enhanced stakeholder participation of ORASECOM. For example, in 2010, the Nile Equatorial Subsidiary Action Plan, an investment arm of the NBI, conducted a study tour to southern Africa, both to the ORASECOM Secretariat and the Komati Basin Authority. The Secretariat used this opportunity to introduce the visitors to ORASECOM, its mandate and functions. Discussions on modalities of stakeholder participation in Orange-Senqu were part of the agenda.

Other stakeholder engagements are through the Joint Basin Surveys (JBS). As a way of involving stakeholders, more than 100 learners and students were actively involved in the 2010 JBS and they were shown how to use the mini South African Scoring System (miniSASS) to determine the health of aquatic ecosystems at four sites across the basin. Schools in Tsabong in Botswana, where rivers or streams are dry most of the time, were shown how to take samples of underground water, while public events at each of these sites were used to build awareness about ORASECOM, its mandate and activities.

Some ORASECOM stakeholders however have the opinion that there is still limited participation, especially in communication. Commenting on this opinion, Sakupwanya cautions that stakeholder involvement is at best a cash/resource intensive undertaking. This observation resonates with the view expressed by Anton Earle where he says “to succeed stakeholder participation must be a sustained and consistent engagement that is both supported and encouraged”.

Notwithstanding this, Sakupwanya feels that ORASECOM is still quite far ahead of many other basins in this regard, which, he hastens to add, does not mean it should not strive to improve and do better.

Recounting the ORASECOM experience in stakeholder involvement, the Executive Secretary draws a distinction between what he terms the successful engagement of “core stakeholders” in project delivery, including studies, and during planning processes such as for the SAP and the basin IWRM plan, as opposed to decision-making processes within ORASECOM, such as in meetings and in the functional cooperation activities of the Commission. He has the opinion that there has been limited progress in engaging the wider stakeholder group in the decision-making processes. He attributes this to deliberate caution on the part of ORASECOM to push for greater engagement due to the high asymmetry in capacity in terms of resources, and access to knowledge and information among the stakeholders in the basin.

He also points to the extraordinary high level of economic development and of investment in some parts of the basin and the centrality of and dependence on water in it, in comparison with other river basins in the region. He makes an example of the Okavango where, as he puts it, stakeholders are relatively at similar levels of development compared to the high levels of imbalance typical of the Orange-Senqu Basin. This brings with it sensitivities that dictate a more cautious approach, especially given the backdrop of water’s natural variability of access in the basin.

A high level of complexity will be encountered when attempting to craft a platform that could be termed equitable representative of stakeholders in the basin. ORASECOM can therefore not move at the pace that one might have imagined when the Stakeholder Roadmap was first crafted.

It is both remarkable and commendable that despite the fact that it was the Commission itself that crafted the roadmap, the Executive Secretary still has the latitude to advise against its hasty implementation and opt for a more cautionary approach.

### 2.7.2 Communication and Information Sharing in the Orange-Senqu Basin

ORASECOM has used a variety of communication and awareness methods in place to reach out to stakeholders and target groups, including online and print material such as a website, posters, newsletters, press releases, information kits and other promotional items to achieve this goal. ORASECOM has received financial assistance for this purpose from several ICPs such as the EU, GIZ and UNDP/GEF. A communication strategy was developed in 2010. The strategy compels the CTT to advise Council on the choice of information tools ORASECOM should employ to get its information and messages across. This should be done in close consultation with the Secretariat.

Motoho Maseatile, Director of Water Affairs in Lesotho, gave an example of the Joint Basin Study which achieved success in propagating knowledge and exposure. He suggests that this is made possible by a healthy cooperative environment characterised by frank discussions and exchange of reports and information by Member States. He notes the advanced institutional arrangements in which Council is able to call upon any of the task teams to investigate and report on any relevant topic.

### ORASECOM Newsletter

The Communication Strategy recommended the development and reproduction of an ORASECOM newsletter on a regular basis. ORASECOM has produced five issues to date, with the first one produced in 2009 and the latest one in 2014. The newsletter is intended to share ORASECOM experiences and knowledge with a broad spectrum of stakeholders and other partners interested in transboundary water resource management. It is a useful tool in keeping all stakeholders informed about developments and events happening in the Orange-Senqu River Basin.

### Launch of the ORASECOM River Awareness Kit

ORASECOM launched its Orange-Senqu River Awareness Kit (RAK) on 19 October 2009, in Maseru, Lesotho. The RAK introduces users to the fundamentals of the geography, socio-economics, water governance and water management of the Orange-Senqu River Basin. The RAK provides a centralised repository for knowledge related to the basin, and includes an abundance of information on history. Some of the items included within the RAK are self-learning resources, supported by interactive visualization tools, maps, documents, Google Earth layers and quizzes. The RAK was developed with financial and technical support from GIZ. The intended audience includes government agencies, river basin managers, non-governmental organizations, educational establishments and the general public, as well as the international community so they can better understand the basin and its key challenges.

The kit serves as official reference on scientific information on the basin water resources and issues, thus increasing access to knowledge that has promoted cooperation and understanding of the Orange-Senqu River Basin issues.

*“The River Awareness Kit is a big success that other basins would do well to emulate.”*  
— **Jefer Sakupwanya**



Participants showing the River Awareness Kit at the launch

### ORASECOM Water Information System

The ORASECOM Water Information System (WIS) was put in place to increase access to credible and quality-assured data and information on the Orange-Senqu River System. The portal include spatial, time-series and non-spatial data. It has profiles of relevant data custodians and their information systems to facilitate networking. The portal is a repository for all ORASECOM scientific and technical reports on the Orange-Senqu River Basin. The WIS includes information related to Basin State data custodians with data and information holdings relevant to ORASECOM's functions.

"In the past, countries would collect information individually, using different methods for data collection and processing. Now we are developing a comprehensive, unified data management system," says the Executive Secretary, Lenka Themae.

The system was developed and established by the UNDP-GEF-supported, Orange-Senqu Strategic Action Programme while the maintenance and updating of the WIS is now being supported by GIZ through a programme for the development of the Orange-Senqu IWRM Plan.

### Exhibitions

ORASECOM participates in regional and international workshops and conferences. To increase visibility of the organization, ORASECOM staff attending such meetings usually establish exhibition stands. Recent examples are ORASECOM's participation at the RBO workshop in Johannesburg in 2014 and at the SADC Water Dialogue in Windhoek, Namibia, in 2015. ORASECOM use such opportunities to share information about activities taking place in the basin with the stakeholders.

In March 2010, the Commission organized an ORASECOM exhibition at the Annual World Water Day celebrations in Maun, Botswana. The event provided a good opportunity to showcase key achievements at the exhibition stand. Communication products include the ORASECOM information pack, newsletters, mousepads and the River Awareness Kit.

### Other Communications Materials through the EU Support

One of the most visible outcomes of the EU support to ORASECOM has been the communications activities. It was recognized at the outset that awareness of ORASECOM was low among grassroots stakeholders in the basin. Communications activities therefore are primarily aimed at introducing and marketing the organization and its function. This focussed on raising ORASECOM's profile as well as communicating the results of the EU project. A wide range of communications materials have been produced including calendars, video materials, booklets, posters, newsletters, press kits and other promotional items.

### Orange-Senqu River Learning Box

In collaboration with the key users, ORASECOM developed an Orange-Senqu River Learning Box (OSRLB) for children aged 10-12 years. The River Learning Box was developed from 2011 to 2014, although it was first proposed in 2007 by the ORASECOM Roadmap Towards Stakeholder Participation. However, the idea took root after a visit to the ICPDR in 2008. The ICPDR had already developed and distributed a Danube Box with great success. The idea was to develop an adapted version of the Danube Box for the Orange-Senqu River Basin. The Orange-Senqu River Learning Box will now benefit from this North-South Cooperation in the form of a twinning arrangement between two river basin organizations.

"I certainly found the toolbox idea obtained from the Danube visit to be quite useful especially as it led to the involvement of schools and learners. Would prefer if more such visits be undertaken on the continent rather than further abroad." — **Tracy Molefi, Head of International Waters Division, Botswana**

During the development of the OSRLB, participating schools generated a momentum and interest in the use of the OSRLB to support learning for 10-12 year old schoolchildren. The contents of the OSRLB include the teacher's file in both electronic and hard copy; Orange-Senqu Artery of Life Book; blue pamphlets on start-up stories; green sheets on facts about different topics on water and related environment; and yellow guiding sheets for children's fieldwork. In view of the investments and achievements made so far and the need for sustainability, in partnership with GIZ, ORASECOM intends to implement an initiative with the two components.

### 2.7.3 Enhancing Communication and Information Sharing

From the interviews conducted, most respondents said the Secretariat has made great progress in ensuring that information gets to all stakeholders on time. This is demonstrated by a number of reports produced so far and keeping the ORASECOM website up to date. According to Aune Amwaama, a Communication Task Team Member for ORASECOM, the Secretariat has managed to use existing structures within the Member States to reach its stakeholders in different parts of the basin. She however underscored the need for more concerted efforts by Member States in relaying information as the Secretariat alone cannot succeed in achieving this goal. A good example cited by stakeholders is that the LHWP Phase 2 has suffered immensely due to failure on the part of authorities to properly disseminate in a timely manner the true situation and trends around the project hence a lot still needs to be done.

Further, it was observed that there is need to increase frequency of producing materials as well as adhering to the communication plan. ORASECOM had produced a communication plan but of late it has not been adhered to. The Communication Task Team is urged to hold meetings as planned.

Stakeholders expressed the need to increase targeted information, especially for the communities. An important example cited was the schools project materials which were made for a specific age category. Yet most of the other information materials speak mostly to the technocrats.

Another observation was the need to improve on the information generated by the Member States and make that information available to others in time. It was also felt that raising awareness on IWRM, for example, should be complimented with livelihoods activities such as water supply. There was also emphasis on the need to conduct needs assessments to target the exact issues they are facing.

"Talking about IWRM when their immediate challenge at that time is bursting sewage ponds, will just be a waste of time. You just kill their morale," says Vivian Kinyaga.

## 2.8 ORASECOM's Contribution to Infrastructure Planning and Development

The Orange-Senqu Basin is one of the largest river basins in southern Africa and provides the water required to drive the most economically active area in region. The basin supports largescale irrigation and meets the domestic needs of more than 14 million people. According to the ORASECOM Infrastructure Catalogue of 2014, demand for water in the basin has been assured through systematic water infrastructure development in the form of water transfer schemes and construction of numerous dams. Currently, the Orange-Senqu system hosts some 300 built structures, among them 30 large dams and several large inter- and intra-basin transfers.

Several new developments have already been commissioned or have been identified as possible future demand centres for water along the Lower Or-



ange River. In Namibia such developments include the Haib copper mine, Skorpion lead and zinc mine (already developed), the Kudu gas-fired power station at Oranjemund, and several irrigation projects for communal and commercial irrigation along the northern riverbank. Similar potential exists on the South African side of the river with particular need to develop irrigation for previously disadvantaged farmers.

In Lesotho there is considerable development planned for the Lesotho lowlands area and also the potential for further transfers from the LHWP. In Botswana, the developments that may influence the Orange River are restricted mainly to groundwater abstraction. With such a huge momentum of infrastructure development in place, riparian states have always prioritised the need for greater cooperation of stakeholders in planning to ensure prevalence of peace.

The establishment of ORASECOM in 2000 not only strengthened cooperation between Member States but also ensured that communities who initially had no voice begin to participate in decision-making with regard to infrastructure development.

Before undertaking a project in the basin, formal engagement between and among all Member States involved usually precedes such developments. Environmental flow requirements and environmental impact assessments are some of the critical tools that are used to determine the impact of a project in the basin. Representatives of the LHWP are already in discussion with people affected by Phase II and are encouraging them to play a part in planning their future. For this next phase, people will be given tangible benefits such as education, decent housing, access to health centres and community development projects.

Learning from the past mistakes, stakeholders have realized the need for proper planning and design of infrastructure. An example of a design fault that can be cited is that of Katse Dam. According to the Orange-Senqu Artery of Life, the floodgates are too narrow to allow an adequate escape of water capable of flushing out the river which is something the ecosystem needs now and in the future for regeneration. Experts in the basin are therefore putting effort into discussing the implications of future expansions, for example of LHWP, by looking at ecosystems further down the Orange River and whether it is right to reduce river flow further.

With regard to environmental flow requirements, international law and regional agreements give countries in the basin a say in whatever developments take place that will impact on the flow of shared rivers. An environmental flow is the water provided in a river (or wetland) that maintains the ecosystem in a negotiated ecological condition. This condition is decided by society and is normally a compromise between economic, social and ecological values of the water for various uses.



In Namibia, a project was carried out to determine environmental flow requirements of the Fish and lower Orange–Senqu Rivers and estuary. The need to establish the flow requirements of this section of the river became increasingly urgent because two large dams, the Vioolsdrift on the lower Orange River and the Neckartal on the Fish River are at an advanced state of planning. These lower areas of the basin are ecologically important and sensitive.

The water resources of the Orange–Senqu and its tributaries are vital for supporting the ecological balance of the area and the livelihoods of people there. High demands are estimated to have reduced the amount of water reaching the mouth to approximately 40 percent of the average annual natural flow. The establishment of integrated basin-wide environmental releases is central to mitigating the effects of reduced water resources and changes in flow patterns. This work will contribute towards the determination and implementation of synchronized catchment releases proposed in the Strategic Action Programme for the Orange–Senqu River Basin to ensure appropriately timed flows that sustain the aquatic ecosystems and the services they provide, while meeting the demands of the population.

Naturally there was a period when the river did not flow, allowing certain organisms to breed. Currently the water flows throughout the year due to the damming and certain organisms that do not breed in water have disappeared. The Commission was therefore urged to find a way to simulate the natural conditions to allow certain organisms to continue breeding. At present there is no agreed environmental flow assessment method for the Orange River Basin. Lesotho and South Africa have applied slightly different methods for environmental flows but the results from these methods are statistical.

Feasibility studies for the potential sustainable water resources development are usually undertaken in the basin. A good example is the ORASECOM Molopo–Nossob Water Resources Study which produced catchment areas for this part of the Orange–Senqu Basin. Another feasibility study was for the Lesotho Lowlands Water Supply Scheme in 2011, which was carried out to investigate potential water resource developments to ensure the long-term sustainable water supply to the lowlands area, since this area in particular often suffers from water shortages.

## 2.9 Recommendations

The Year 2015 marks 15 years since ORASECOM was established. As highlighted in the report, the Commission has achieved many milestones since its establishment. These include consolidating its structure and implementing several projects aimed at creating a knowledge base and understanding about the Orange-Senqu River System, as well as projects on protection of the river system.

This section gives recommendations derived from the consultation process during preparation of the ORASECOM 15 Year Report.

### 2.9.1 Revision of the ORASECOM Agreement to Reflect the Evolving Role and Mandate of the Commission

There is need to speed up the process of revising the Agreement to reflect the evolving role and mandate of ORASECOM.

Ministers were not provided for in the Agreement and the current structure of ORASECOM. Involvement of Ministers in ORASECOM will enable ORASECOM to make and implement more decisions.

There is need to expand the advisory role of ORASECOM for it to be able to implement projects and provide policy guidance. At present, ORASECOM is restricted to providing technical advice.

It is essential to redefine the roles and organs of the commission. The council of officials are just technical advisors, and need to play a more pertinent role, not only advising, but also to undertake strategic planning for ministers to make informed decisions. The role of committees should be expanded and strengthened.

In line with the results of the Delphi process there is need to revisit and align the agreement with the Revised SADC Protocol on Shared Watercourses on issues such as notification.

The legal status of ORASECOM was not properly presented. There is need to redefine this in the revised agreement, so as to spell out immunities and privileges of the ORASECOM.

As the Secretariat is overstretched, there is need to speed up implementation of the recommendations from the Institutional Review of 2014 on expanding the Commission to reduce the workload and achieve maximum results. This includes recruiting new Task Teams, Communications Expert, and an *ad hoc* working Group.

### 2.9.2 Linkages of ORASECOM Agreement with Bilateral Agreements

There is need to realign the ORASECOM Agreement such that it supersedes all of the basin's existing and future bilateral agreements. This should include those that were in place before it came into force. To do so would further enhance the equality of participation of the parties as well as bringing it more in line with IWRM and in keeping with the SADC strategy.

Some stakeholders feel that the Commission as it stands has less powers to deal with certain issues, especially on bilateral commissions. The power over decision-making remains within the bilateral relations and ORASECOM oversees the process with no real teeth. ORASECOM should be able to make final decisions on issues that affect the basin as well as enforce implementation of strategies to address basin challenges.

### 2.9.3 Communication and Information Dissemination

While so many reports and materials including the website have been produced and are accessible to the public, the concern with some stakeholders is that the information available is mainly for the technocrats. There is need to produce information targeted for the communities and to widen the projects targeting schools. For demand management projects, there should be targeted materials for the local authorities and for farmers. The frequency of circulating material should be increased and there is also need to follow the communication plan.

### 2.9.4 Stakeholder Participation

There is need to establish a basin-wide forum for stakeholder participation, as stakeholder participation is limited to surveys such as water quality monitoring.

National forums that are to feed into the basin-wide forum may be established first in countries where they are not in place. Namibia has been engaging stakeholders since 2008 and now has a formalised board. The forums should define what role they play in the implementation of the National Action Plan. Namibia has dedicated officials who run the stakeholders' office. There should be similar forums in each country and the representative of each forum would form the basin-wide forum. The basin-wide stakeholder forum will be a "one-stop shop" for all committees to brainstorm on key issues in the basin.

### 2.9.5 Maintenance of the Ecological Wellbeing of the Orange-Senqu River System

All basin countries are to contribute towards protection and rehabilitation of the source of the Orange-Senqu River. It has become clear that Lesotho, especially the communities living around wetlands and sensitive catchments, cannot be expected to bear the burden of protecting them alone, both from a capacity and resources perspective. These communities are called upon to make sacrifices that may include finding other sources of fuel and alternative grazing lands, far from their villages.

### 2.9.6 Pollution Control

The first Joint Basin Survey revealed that the Orange-Senqu River has high levels of pollution as a result of industrial activity and runoff from agriculture. The Commission should focus on tackling pollution at source, and should implement the Polluter Pays Principle. The wetlands at the river mouth which were once declared a Ramsar site have since been removed from the list and declared the most polluted in southern Africa due to pollution from industries, mines and irrigation. The pollution has affected the breeding of some species. The birds and microorganisms which used to breed there are not breeding anymore. The Commission should be able to enforce measures to reduce the pollution in industries, mines and from irrigation.

### 2.9.7 Maintenance of Environmental Flow Requirements

ORASECOM should ensure that environmental flow requirements for the Orange-Senqu River are met. Due to the dams along the river, water now flows throughout the year and there are some organisms that do not breed in water. There is also need to simulate natural flows breeding of some species.

### 2.9.8 Addressing the Challenge of Invasive Species

Measures should be put in place to address the challenge of invasive species. In the Namibian part of the Orange-Senqu River there are areas which are now difficult to access as a result of invasive species.

There is need for regular surveys to identify the extent of the impact through satellite images and ground truthing. This will help to assess whether the efforts being made are effective.

### 2.9.9 Exchange Visits

More exchange visits should be undertaken within the continent rather than further abroad. There is more two-way value to be reaped from interaction with African basin organizations than elsewhere.

### 2.9.10 Induction Courses for New Commissioners

ORASECOM should develop a programme to induct new commissioners to ensure successful implementation of its activities. It is important that commissioners have common understanding of the principles and norms they claim to observe.

It should also be borne in mind that even current members require refresher courses to validate their appreciation of issues.

### 2.9.11 Aligning National and Basin Interest

Basin countries are to pursue programmes and projects to meet their development objectives, and this should be reflected in the ORASECOM Agreement. The Lesotho Highlands Water Project for example, has had the effect of reducing Lesotho's freedom of action and its sovereignty in areas upstream of the river source. Limitations are imposed by the need for extraordinary attention to maintaining the ecosystem health of the area and the pristine nature of the water for the project.

This has impact on mining in the diamond rich part of Lesotho, where the country cannot fully exploit the mineral resources.

### 2.9.12 Funding Sustainability

There is need to concretize a sustainability strategy for ORASECOM, and be able to deliver its mandate without reliance on external funding. To this end, Member States should consider increasing their financial contributions to ORASECOM.

### 2.9.13 Capacity Building

Capacity building has been realised over the past 15 years in various skills. However Member States feel that the capacity obtained so far is not adequate for them to fully take charge of certain interventions such as the joint surveys on water quality. The concern is that there is still much reliance on foreign consultancies. Capacity building needs to be done in all aspects at community level as well. Due to the high turnover of Commissioners there is need to have regular courses. These could be once every two years to ensure that everyone has a common understanding of the role of ORASECOM and what and how it is intended to achieve its goals.

A number of officials have had training in different areas including negotiation skills. What is now required is the evidence of the skills gained in negotiating projects in the basin and at regional and international level.

### 2.9.14 Groundwater Monitoring

Little attention is given to groundwater issues. The revised agreement is to take that into consideration and provide a specific clause to deal with depletion and pollution of groundwater.

### 2.9.15 Climate Change

There is need to increase efforts towards climate change adaptation in the basin. Equally important is the need to build local capacity in climate modelling and early warning system to reduce over-reliance from external experts. A mapping of climate change impacts and efforts being done to reduce the effect is essential.

### 2.9.16 Research

There is need to deepen efforts to understand the Orange-Senqu River System, through leveraging on technological developments such as remote sensing and new modelling techniques. Increased research efforts are necessitated by ever-growing challenges faced by the basin, which are a result of increasing demand for water, urbanisation, industrial development, and pollution. To ensure sustainability, there is need for data and information to be collected and managed by ORASECOM.

### 2.9.17 Equitable Sharing of Water Resources

There is also need for guidelines for equitable sharing of water resources. ORASECOM should be able to monitor who is getting what and set limits to allow equitable sharing of water resources in the basin.

### 2.9.18 Mainstreaming Indigenous Knowledge Systems

There is concern that Indigenous Knowledge Systems (IKS) are not integrated into modern strategies of resources management. Communities know from local and indigenous knowledge how to manage water resources, for example the aquifers and the wetlands. There is need therefore for IKS to be mainstreamed in development and implementation of water resources management plans in the basin.



## CONSOLIDATED FINANCIAL OVERVIEW

### 3.1 Financial Summary

In the last five years from 2009 to date, ORASECOM has received a significant amount of financial resources from Member States' contributions and from ICPs. As shown in Figure 3.1, much of the funds in the period under review came from UNDP GEF which contributed 44 percent of the total budget followed by GIZ with 27 percent. The European Union and GEF contributed 13 and 7 percent respectively with Sasol contributing two percent of the budget. Member States' contribution, that is money coming from the four riparian states, accounted for seven percent of the budget. The three major ICPs which have financially supported implementation of projects in the ORASECOM River Basin are thus UNDP GEF, GIZ and EU.

The annual contributions from Member States have been consistent since 2005. All the four countries of Botswana, Lesotho, Namibia and South Africa have each been contributing R500,000 per year since 2005. The current core funds amounted to R4.4 million as of end January 2013.

ORASECOM budget for 2011 / 2012 amounted to 2 million (audited) and for 2012 / 2013, the budget was 2.4 million (audited) with budget for 2013 / 2014 amounting to 2.7 million. The financial summary shown in Table 3.1 provides a breakdown of funds for the ORASECOM projects supported by ICPs up to end of January 2015.

Figure 3.1 ORASECOM 5 Year Financing (2009/10 - 2014/15 – Average Euro 3.3 million/annum)

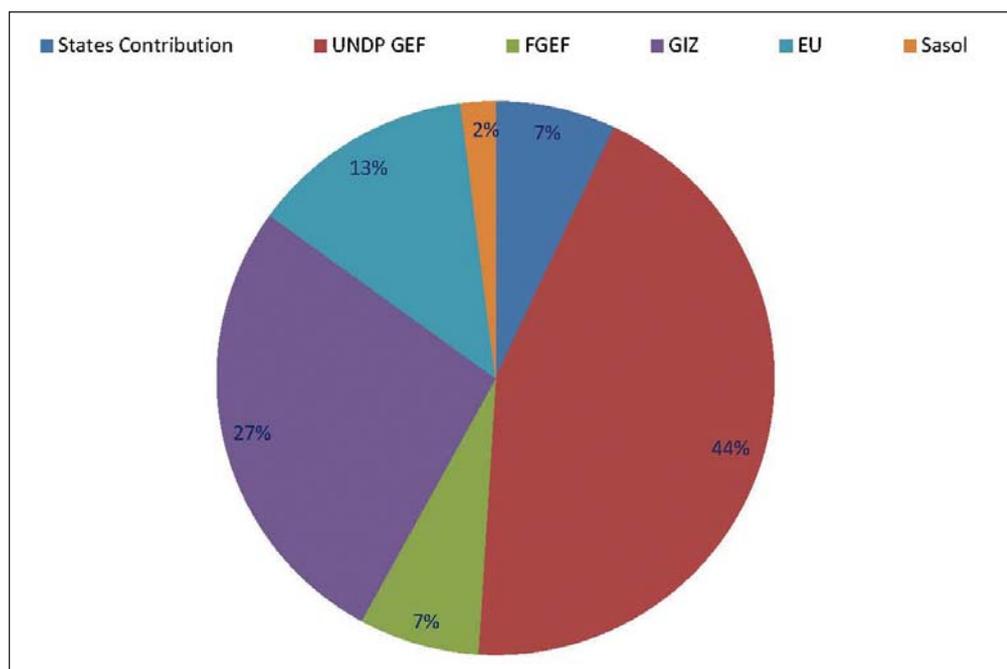


Table 3.1 Financial Summary from September 2009 to January 2015 of Funds from ICPs

| Description  | Amount              | Currency |
|--|---------------------|----------|
| <b>1. TDA / SAP Project (September 2009 to June 2014)</b>  |                     |          |
| Total Budget   | 6,300 000.00        | USD      |
| Amount Spent during 2009 to March 2014   | 6,300 000.00        | USD      |
| <b>Balance</b>   | <b>0.00</b>         | USD      |
| <b>2. Sponges Project (Mar 2013 – September 2015)</b>  |                     |          |
| Total Budget   | 1,092,493           | EURO     |
| Amount Spent during Mar 2013 to January 2015   | 495,013             | EURO     |
| <b>Balance</b>   | <b>597,480</b>      | EURO     |
| <b>3. IWRM Plan Consolidation (Mar 2013 to March 2015)</b>   |                     |          |
| Total Budget   | 1,102,000.00        | EURO     |
| Amount Spent as at January 2015  | 820,000.00          | EURO     |
| <b>Balance</b>   | <b>282,000.00</b>   | EURO     |
| <b>4. IWRM Community Projects (Mar 2013 – May 2015)</b>  |                     |          |
| Total Budget for all 6 Projects (3 are in Orange-Senqu River Basin covering Botswana, Lesotho and Namibia. Other 3 are in Limpopo River Basin covering South Africa, Mozambique and Zimbabwe). | 3,756 270.00        | EURO     |
| Amount Spent during March 2013 to January 2015   | 902 180.00          | EURO     |
| <b>Balance</b>   | <b>2,854 090.00</b> | EURO     |
| <b>5. GIZ/SASOL/Emfuleni Water Conservation and Demand Management Project (2011-2013 with extended duration based on reinvestment of savings.)</b>   |                     |          |
| Total Budget   | 10,000 000.00       | ZAR      |
| Total Spent  | 10,000 000.00       | ZAR      |
| <b>Balance</b>   | <b>0.00</b>         |          |
| <b>6. Institutional Strengthening (Aug 2013 – September 2015)</b>  |                     |          |
| Total Budget   | 348 520.00          | EURO     |
| Amount Spent during Aug 2013 to January 2015   | 179 090.00          | EURO     |
| <b>Balance</b>   | <b>169 430.00</b>   | EURO     |
| <b>7. JBS 2 Project (Nov 2014 – September 2015)</b>  |                     |          |
| Total Budget   | 461 830.00          | EURO     |
| Amount Spent during Nov 2014 to January 2015   | 15 932.40           | EURO     |
| <b>Balance</b>   | <b>445 897.60</b>   | EURO     |



The Lower Orange-Senqu River

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## List of Commissioners, Officials and Partners Consulted

1. Aune Amwaama, MAWF Communications Task Team, Namibia
2. Tinashe Chizema, Technical Task Team Department of Water and Sanitation, South Africa
3. Thatayaone G. Dedede, Deputy Permanent Secretary, Botswana
4. Anton Earle, Director of African Regional Centre, Stockholm International Water Institute
5. Piet Heyns, Former Commissioner, Namibia
6. Mathias Kashindi, Ministry of Justice Legal Task Team, Namibia
7. Dr Vivian Kinyaga, Former DRFN Director, now with MAWF Namibia
8. Harold Koch, Former Commissioner, Namibia
9. Emmanuel Lesoma, Former Principal Secretary, Ministry of Mineral Resources, Lesotho
10. Livhuwani Mabuda, Head of Delegation, South Africa
11. Felix Malachamela, Council Member for Lesotho, Lesotho
12. Christopher Manisiku, MAWF Finance Task Team, Namibia
13. Motoho Maseatile, Director of Water Affairs, Lesotho
14. Alfred Masedi, SADC Secretariat, former Head of Botswana's International Waters Office
15. Elize Mbandeka, MAWF Technical Task Team, Namibia
16. Motake Mojakisane, Water Commissioner, Botswana
17. Tracy Molefi, Head of International Waters Division, Botswana
18. Rethabile Mosisili, Head of Delegation, Lesotho
19. Ezekiel Mpofo, Programme Assistant, ORASECOM Secretariat
20. Ndivhuho Mudzunga, Finance and Administration, ORASECOM Secretariat
21. Rennie Chioreso Munyanyi, DRFN, Namibia
22. Shashini Munika, MAWF Technical Task Team, Namibia
23. Dr Obolokile Obakeng, Head of Delegation, Botswana
24. Rapule Pule, Water Resources Specialist, ORASECOM Secretariat
25. Mothusi B. Rabasha, Legal Advisor Water Ministry, Botswana
26. Phera Ramoeli, Senior Programme Officer, SADC Water Division, SADC Secretariat
27. Luther Rukira, Former NAMWATER now with Aqua services, Namibia
28. Dr Jeffer Sakupwanya, Water Resources Expert
29. Dr Thomas Schild, GIZ Head of Programme, Transboundary Water Management in SADC
30. Thato Setloboko, Technical Task Team, Botswana
31. Bernadette Shalumbu, DRFN, Namibia
32. Dr Vaino Shivhute, CEO NAMWATER, Namibia
33. Gibson Sibanda, Legal Task Team Member, Botswana
34. Andrew Takawira, Senior Programme Officer, GWP SA
35. Khomoatsana Tau, Founder Member and Leader of Lesotho Delegation
36. Lenka Thamae, Executive Secretary, ORASECOM Secretariat
37. Dr Eng Michael J. Tumbare, External Stakeholder, Zimbabwe
38. Peter Van Niekerk, Former South Africa Commissioner and Founder Member
39. Dr Horst Vogel, GIZ Former Head of Programme, Transboundary Water Management in SADC
40. Nico Willemse, Head of Energy and Environment, UNDP





