

Contents

| | | |
|-----|----------------------------------------|--------|
| 1 | Introduction | Page 6 |
| 2 | Preface | 5 |
| 3. | Map of River and Lake Basins | 9 |
| 4. | Table of Summary of Major Basins | 10 |
| 5. | Table of Summary of Minor Basins | 11 |
| 6. | Congo river basin..... | 13 |
| 7. | Gambia river basin..... | 16 |
| 8. | Incomaputo River basin | 18 |
| 9. | Juba-Shabelli River basin | 22 |
| 10. | Komati River basin..... | 24 |
| 11. | Kunene River basin..... | 2 |
| 12. | Lake Chad River basin..... | 32 |
| 13. | Lake Victoria River Basin..... | 36 |
| 14. | Limpopo River basin | 40 |
| 15. | Niger River basin | 44 |
| 16. | Nile river basin | 49 |
| 17. | Okavango River basin..... | 55 |
| 18. | Orange River basin..... | 59 |
| 19. | Ruvuma River basin..... | 63 |
| 20. | Senegal river basin | 65 |
| 21. | Volta River basin..... | 70 |
| 22. | Zambezi river basin | 78 |
| 23. | Map of Trans-Boundary Aquifers | 78 |
| 24. | Table of Trans-boundary Aquifers..... | 79 |

African River Basins

Preface

The Sourcebook on Africa's River Basin Organizations (RBO) volume 1 draft has been produced by Warner Consultants Ltd of Kampala Uganda as a desk study on behalf of African Network of Basin Organizations (ANBO), African Ministers Council on Water (AMCOW) and GTZ. It provides a comprehensive compendium of information on Africa's River Basin Organizations which are international bodies that run the river organizations. The information is given in fact sheet specifically designed and structured to capture information ranging from administrative aspects of the organizations to development of member states and stakeholders. Some scanty information on Africa's Trans-Boundary aquifers is also available.

The Sourcebook is intended to facilitate sharing of experience, learning from each other and information exchange among

RBOs. In turn this is expected to enhance effectiveness and performance of the organizations ultimately resulting in the realization of equitable and sustainable utilization of basin resources. The sourcebook should be continuously updated if it is to achieve those noble goals. All water sector planners, managers and users in the various organizations are requested to study the sourcebook and submit corrections and/or additions to the authors through GTZ.

Finally the sourcebook should provide a compendium of data on Africa's hydrogeological basins to facilitate better knowledge and improved governance of the basins leading to Integrated Water Resources Management on the continent for the benefit of **all**.

1.0 Introduction

The Source book on Africa's River Basin Organizations provides information on the status of cooperation on African rivers and lakes and information on the management of transboundary surface and groundwater resources. The introduction consists of two parts, section one and section two.

Section one is more analytical in nature and comprise of thematic comments on recent developments on the continent, common challenges, and issues to be solved by Trans-Boundary (and national) institutions. It examines selected topics such as the structures and modes of organization of these institutions and any other relevant theme.

Where relevant data could be sourced financing arrangements of the river / lake basin organizations, information and data sharing, notification and procedures of dispute settlement, and challenges related with the participation of stakeholder are outlined. Benefit sharing and its actual relevance for cooperation on tran-sboundary surface and groundwater resources, the relation between River Basin Organizations (RBO) and development aid are also captured.

Material contained in the Sourcebook were obtained from diverse sources including regional and international organizations such as the African Union (AU), Africa's Ministers Council on Water (AMCOW), river and lake basin organizations, the Southern African Development Community (SADC), the East African Community (EAC) as well as the EU Water Initiative, New Partnership for Africa's Development (NEPAD), the UN Economic Commission on Africa, and other UN organizations (e.g. UNEP, UNDP, the World Bank). The internet was an important source of information especially for river basins whose websites could be identified at the start of the exercise.

In section two a model data/fact sheet recording all the different types of information about a typical African river basin organization is developed. The fact sheet is specially formatted to capture most information on African transboundary water organizations. All established river basin organizations and less sophisticated cooperative structures that are instrumental to the development of transboundary water regimes are covered. Each fact sheet includes the same information categories to structure the information uniformly and give the reader insights into the status of cooperation, the organizational structure, and the mandates and functions. The present categories are not exclusive and could be extended or reduced if appropriate and wished. References and links will be listed in the annexes to provide more detailed information and access to instructive documents.

The Sourcebook is still to be completed and will be updated and revised at regular intervals thereafter. New organizations and those without any or much information currently will be added, and new issues which RBO representatives feel should be included in the sourcebook will be incorporated in the final version of the document. The final version may be published as a hard copy or distributed electronically (CD-ROM or website).

To ensure that the Sourcebook becomes a real and vital source of information, its editors will develop and ensure close contact with those running existing and newly emerging river and lake basin organizations, regional organizations, and the donor community, which is crucial for providing reliable and updated information.

2.0 Section One

2.1 Fact Sheets of River/Lake Basin Organizations in Africa

The information about surface water resources that has been collected in individual Fact Sheets are presented in the Sourcebook according to the challenges outlined in section one. This information is meant to provide an overview of the river / lake basin organizations with respect to their organizational set-up, mandates, functions, jurisdiction, the relation between river basin organizations and the contracting parties, their financial regulations, the status of regional cooperation, etc. Sources of information include treaties and agreements, the river basin organizations' websites, academic research, internet and the press. As a rule, the sources do not provide insight into the organizations' mode of operation, their performance according to their legal mandates and functions, and the resources available.

During the course of improving the Sourcebook, it was desirable, to extend or fine tune the categories from those in the earlier draft. So far, information in the Fact Sheets is organized in the following categories:

2.1.1 General Information

This contains the name of the organization, its abbreviation, administrative address including telephone, e-mail, head of organization, contact person where available and year the organization was launched.

2.1.2 Organizational Structure for Cooperation

Overview of the cooperative structure and organs of river / lake basin organizations, representation of nation states, the rules which govern their internal relations and their interaction with nation states or national administrations and their mandate and authority. With respect to their mandate, we distinguish between "consultative", "advisory", "coordinating", "policy-making", "implemen-

tation" and "regulatory", which bear consequences relevant for example, for financing. The inclusion of additional information on personnel etc. has greatly enriched the sourcebook. The title "organizational structure for cooperation" encompasses both technical committees and established more sophisticated basin organizations.

2.1.3 Website

The existence of a website indicates whether or not an organization provides access to information for outsiders. And where they exist they have been an invaluable source of information about the basin.

2.1.4 Legal Basis

Those treaties or agreements are listed, which define the organizational set-up, mandate, and functions. If available, access is provided to statutes and financial regulations.

2.1.5 Parties To The Agreement(s)

This category lists the contracting parties, those who are not represented, and their location on a given watercourse and lake.

2.1.6 Geographical scope

The jurisdiction of cooperative structures may be "river / lake basins", "sub-basins", "watercourse systems" etc., which is important for developing joint management plans.

2.1.7 Function/Mandate

Objectives and functions are mentioned in this category. We differentiate between mono-functional (hydro-power) and multi-functional organizations, whether they are advisory or regulatory in nature, whether they bear responsibility for strategic or project planning, whether they are only implementing and/or operative bodies, and whether they monitor and assess, evaluate and process data. In addition, it will be mentioned whether land-based pollution sources are part of their mandate wherever this information is available.

2.1.8 Plans/Programs/Projects

This section provides information about (i) implemented, (ii) ongoing, or (iii) planned projects. As a rule, more detailed information is needed, in particular, the funding sources and whether the planned and implemented measures are joint or unilateral undertakings.

2.1.9 Information/Notification

Information is provided on either formal or informal arrangements that regulate the exchange of information and the notification of planned measures.

2.1.10 Rules on Decision-Making and Procedure for Dispute Resolution

This section describes rules for an organization's internal decision-making process and the procedural rules in cases where conflicting and contested issues between member states cannot be solved immediately.

2.1.11 Financing of Cooperative Structures

The financing sources are listed, including the key or formula which defines the respective contribution shares of the contracting parties. Furthermore, decision-making on the budget and the relevant cost components are given as well as whether accounting is monitored. Whether the budget allows the organization to fulfil its mandate and perform its functions should be subject to further investigation.

2.1.12 Stakeholder Participation

This category provides information on whether and how stakeholders may participate, whether non-governmental organizations may actively participate, and whether access to information is provided and secured.

2.1.13 Historical Record of Cooperation

This section gives a brief historical overview of the relevant phases, which eventually led to the creation of the existing cooperative structures or river basin organizations.

2.1.14 References and Links

Sources of the information used are listed.

2.1.2 Basic Data

In this section information on total area of the basin, length of River if applicable and known, rainfall, population and agriculture is given.

2.2 African Trans-Boundary Aquifers

Finally Trans-Boundary groundwater resources are summarized by a map and a table. It should be borne in mind that this is still an area where a lot of expensive research has yet to be carried out to confirm much of the data. The sourcebook will be updated as the existing information is confirmed and new data becomes available.

African River Basins



Figure 1: River and lake basins in Africa

African River Basins

Summary of River Basins Organisation

A. MAIN BASINS

| 1. | Congo | 3,699,100 | 4,667 | Congo Democratic Rep., Central African Angola, Congo Rep. Zambia, Tanzania, Cameroon, Burundi, Rwanda, Gabon, Malawi | Central Africa |
|-----|---------------|-----------|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| 2. | Gambia River | 69,800 | 1,100 | Gambia, Guinea, Senegal | West Africa |
| 3. | Incomaputo | 77,400 | 810 | Mozambique, South Africa, Swaziland, Southern Africa | |
| 4. | Juba-Shibelli | 803,600 | 1,658 | Ethiopia, Kenya, Somalia | Eastern Africa |
| 5. | Komati River | 44,800 | | Mozambique, South Africa Swaziland, Southern Africa | |
| 6. | Kunene | 110,000 | 1,050 ^{6*} | Angola, Namibia South | Western Africa |
| 7. | Lake Chad | 2,388,700 | 1,400 (shari) ^{4*} | Chad, Niger, Central African Republic, Nigeria, Algeria, Sudan, Cameroon, Chad, Libya | |
| 8. | Lake Victoria | 180,950 | | Central Africa Burundi, Kenya, Rwanda, Tanzania, Uganda | East Africa |
| 9. | Limpopo | 414,800 | 1,750 | Botswana, Mozambique, South Africa, Zimbabwe, | Southern Africa |
| 10. | Niger | 2,113,350 | 4,200 | Nigeria, Mali, Niger, Algeria, Guinea, Cameroon, Burkina Faso, Benin, Chad, Sierra Leone | West and Central Africa |
| 11. | Nile Basin | 3,038,100 | 6,700 | Sudan, Ethiopia, Egypt, Uganda, Tanzania, Kenya, Congo Democratic Rep., Rwanda, Burundi, Eritrea | East and North Africa |
| 12. | Okavango | 725,000 | 1,100 | Angola, Botswana, Namibia, Zimbabwe | Southern Africa |
| 13. | Orange | 850,000 | 2,300 | Botswana, Lesotho, Namibia, South Africa | Southern Africa |
| 14. | Ruvuma | 151,700 | 800 ^{6*} | Malawi, Mozambique, | West Africa |
| 15. | Senegal | 490,000 | 1,800 | Guinea, Mali, Mauritania, Senegal | |
| 16. | Volta | 414,000 | 1,610 ^{5*} | Benin, Burkina Faso, Côte d'Ivoire, Ghana, Mail, Togo | West Africa |
| 17. | Zambezi | 1,400,000 | 2,650 | Angola, Botswana, Congo Democratic Rep., Malawi, Mozambique, Namibia, Tanzania, Zambia, Zimbabwe | Central and Southern Africa |

Summary of River Basins

B. MINOR BASINS

| No. | Basin Name | Area of Basin (km ²) | River Length (km) | Country/Countries | Region |
|-----|----------------|----------------------------------|-------------------|----------------------------------------------------|----------------------|
| 18. | Awash | 155,300 | — | Ethiopia, Gjibouti, Somalia | North Eastern Africa |
| 19. | Etosha-Cuveral | 167,600 | — | Namibia, Angola | South Western Africa |
| 20. | Lake Turkana | 207,600 | — | Ethiopia, Kenya, Uganda, Sudan | East Africa |
| 21. | Ogoose | 223,400 | 850 ^{4*} | Gabon, Congo Republic, Cameroon, Equatorial Guinea | Central Africa |
| 22. | Sabi | 116,100 | 680 ^{4*} | Zimbabwe, Mozambique, | Southern Africa |

Reference:

AREA OF BASIN

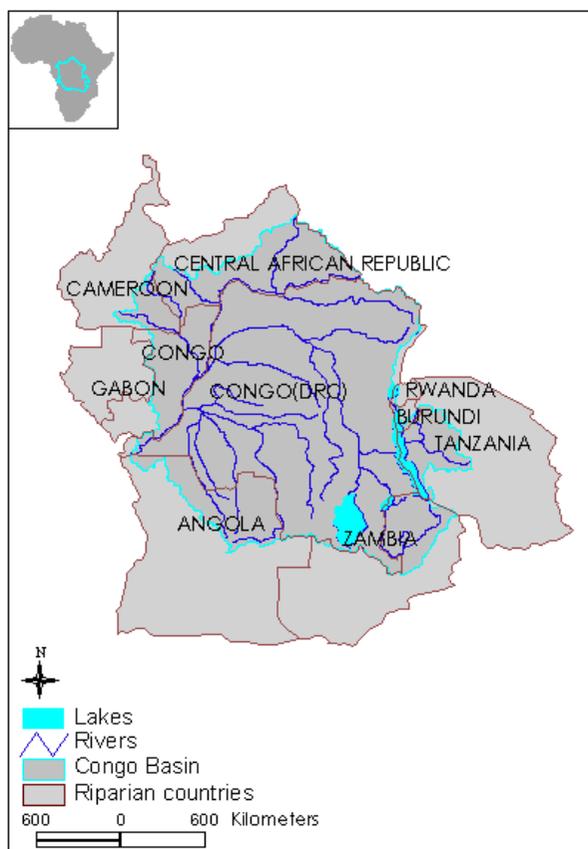
- 1*) International river basin of the World, International Journal of Water resources Development, Vol. 15#4 December 1999.
- 2*) The Times Atlas of the World, Comprehensive Edition, 2001
- 3*) The Water Encyclopedia Second Edition, Lewis Publishers, 1990
- 4*) TaikanOki, Y.C. Sud Earth Interactions, Design of Total Runoff Integration Pathways (TRIP.) A Global River Channel Network
- 5*) River Systems of the World, Rev.Net (<http://www.rev.net>)
- 6*) encyclopedia Britannica (<http://www.britannica.com>)

NOTE:

International Basins are more than 100,000 km² (Refer to 1*) and domestic Basins more than 800,000 km² (refer to 2*) are indicated

African River Basins

Congo River Basin



CONGO RIVER BASIN

Name of Organization: International Commission of Congo -Oubangui-Sangha (CICOS)

Administrative

Address: BP 12645, Kishasha, DRC.

Telephone: (243)817252903,
(1)4088695973.

E-Mail: Cicos_inst@yahoo.fr

Head of Organization: Ndala Benjamin

Position: Secretary General

E-Mail: Cicos_inst@yahoo.com

Website: www.abhs.dz

Year Launched: 1999

Basic Data

Total Area: 3,699,100 km², 12% of the continental area of Africa

Length of River: 5,100 km

Total Population: About 50 million inhabitants

Total Rainfall: Varies from 720 mm/year in the Tanzanian part of the basin to 2115 mm/year in D.R. Congo with an average of 1470

African River Basins

mm/year over the whole basin.

Rain-Fed Agriculture:

Irrigated Agriculture: Irrigation potential figures in the basin vary between 4 and 20 million hectares

Other: Hydropower potential: 39,000 MW at Inga with only 1775 MW installed.

There also exist large potentials for irrigation, navigation, fishery and Eco-Tourism

Riparian Countries

| Area of Basin in Country | | |
|--------------------------|-----------------|-------|
| | km ² | % |
| Angola | 291,500 | 7.88 |
| Burundi | 14,300 | 0.39 |
| Cameroon | 85,300 | 2.31 |
| Central African Republic | 402,000 | 10.87 |
| Congo (DRC) | 2,307,800 | 62.39 |
| Congo Brazzaville | 248,400 | 6.72 |
| Gabon | 460 | 0.01 |
| Malawi | 90 | 0.00 |
| Rwanda | 4,500 | 0.12 |
| Tanzania | 166,800 | 4.51 |
| Zambia | 176,600 | 4.77 |
| Total | 3,697,750 | 100% |

List of Treaties/Agreements

| Date | Treaty Basin | Signatories | Treaty Name |
|---------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| Feb 26, 1885 | Congo, Niger | Austria-Hungary; Belgium; Denmark; France;Italy;Russia; Netherlands;Spain; Great Britain; Germany; Sweden; Norway;Turkey;USA; Portugal | Conference of Berlin |
| July 20, 1927 | M'pozo | Belgium;Portugal | Economic Convention |

Geographical Scope

The basin consists of the Congo river itself, its tributaries of Oubangui, Kasai, Sangha, KUILU, Kwango, Ruki, Lamami, Lulonga, Amwini and smaller rivers.

Organizational Structure

Organizational Structure for Cooperation

No established basin-wide cooperative framework for management and development of the Congo River Basin. Conflicts among member countries have occurred from time to time.

Functions/Mandate

Management Plans and

Action Programs

Monitoring and

Information Systems

Rules on Decision-Making and

Procedure for Dispute Resolution

Financing of NBI and Its

Cooperative Structures

Stakeholder Participation

Historical Record of Cooperation

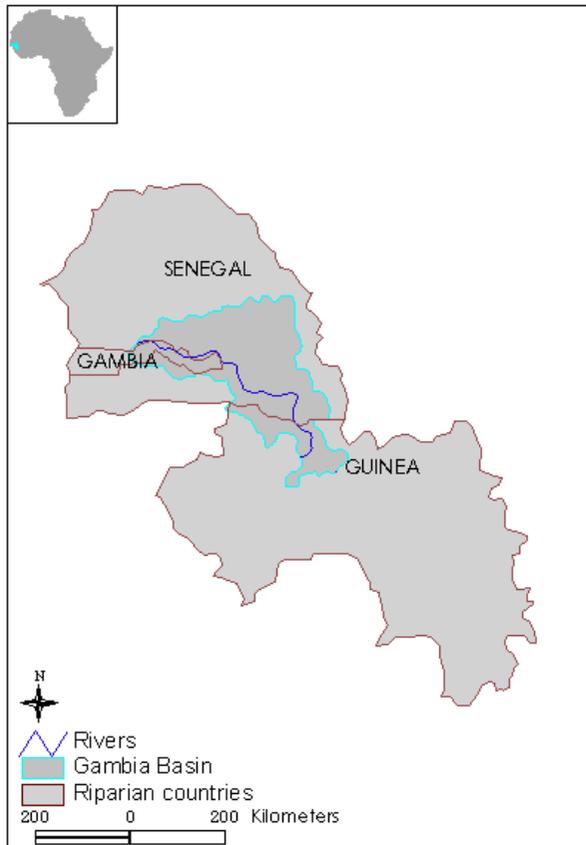
Challenges

Very vast basin , weak economies exacerbated by a long history of conflicts, water security, cooperation for basin development and management, lack of sound basin data, need for capacity building and limited funds.

References and Links

- i) ECA, Study on the Establishment of an Inter-governmental Organization for the Development and Exploitation of the D.R. Congo River resources, 1983-1984.
- ii) AMCOW, Plan D'action sous – Régional pour la Réalisation des Objectifs de Développement du Millénaire et du Sommet Mondial sur le Développement Durable- Afrique Centrale, Portefeuille de Projets Prioritaires, Octobre, 2003.
- iii) UNEP, Atlas of International Freshwater Agreements, (2001).

African River Basins



GAMBIA RIVER BASIN

Name of Organization: Organization for the Management of Gambia River (OMVG)

Administrative Address: BP2353 Dakar.

Telephone: (221) 8223152, (221) 8225926,

E-Mail: omvg@omvg.sn

Head of Organization: Viera Justino

Position: Executive Secretary

Year Launched:

Basic Data

Total Area: 69,900 km²

Length of River: 1,100 km

Total Population:

Total Rainfall: Varies from 1700 mm/year in Southern mountains to 800 mm/year in the north.

Rain-Fed Agriculture: Traditional agricultural practices are common in the basin.

Irrigated Agriculture: Rice grown on irrigated land is one of the main expanding activities in the basin. The basin possesses an irrigation potential of about 130,000 ha.

Other: The basin also possesses high hydro-power and fisheries potential.

Gambia River Basin

Riparian Countries

| Area of Basin in Country | Km ² | % |
|--------------------------|-----------------|-------------|
| Gambia | 5,900 | 8.51 |
| Guinea | 13,200 | 18.92 |
| Senegal | 50,700 | 72.48 |
| Total | 69,800 | 100% |

List of Treaties/Agreements

| Date | Treaty Basin | Signatories | Treaty Name |
|---------------|--------------|-------------------------|--------------------------------|
| Aug 10, 1889 | Gambia | France; Great Britain | Agreement |
| Feb 4, 1895 | Gambia | France; Great Britain | Navigation Notes |
| Oct 19, 1906 | Gambia | France; Great Britain | French/British Frontier Treaty |
| Sep 4, 1913 | Gambia | France; Great Britain | Sierra Leone- Guinea Boundary |
| June 30, 1978 | Gambia | Gambia; Guinea; Senegal | Gambia River Basin Commission |
| June 30, 1978 | Gambia | Gambia; Guinea; Senegal | Status of River Gambia |

Organizational Structure

Organizational Structure
for Cooperation

Geographical Scope

Functions/Mandate

Management Plans and

Action Programs

Monitoring and

Information Systems

Rules on Decision-Making and

Procedure for Dispute Resolution

Financing of Gambia

River Organization and Its

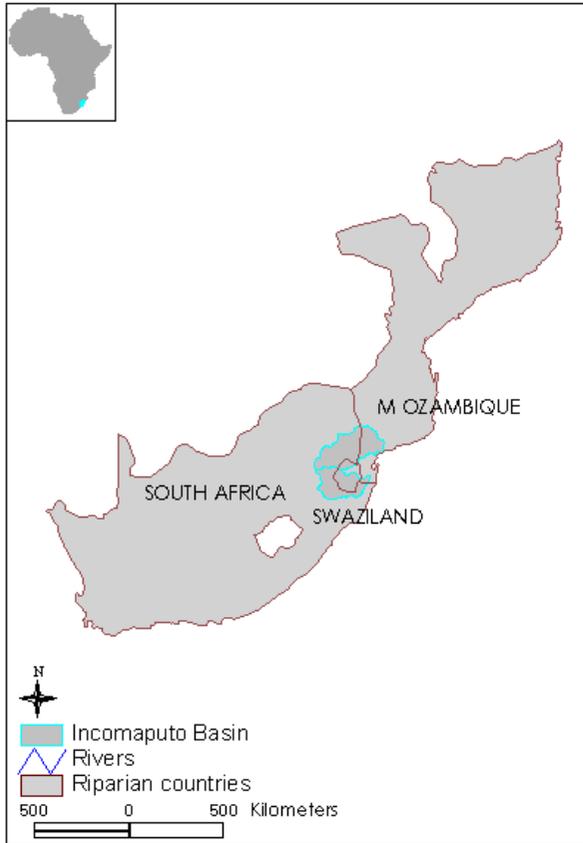
Cooperative Structures

Stakeholder Participation

Historical Record of Cooperation

References and Links

African River Basins



INCOMAPUTO RIVER BASIN

Name of Organization: IncoMaputo Watercourse Commission

Administrative Address:

Telephone:

E-Mail:

Head of Organization:

Position:

Contact Person/People:

Position:

Address:

E-Mail:

Website: www.kobwa.co.za

Year Launched: 1993

Basic Data

Total Area: 77,400 km²

River Length: 810 km

Total Population: 3,257,000 inhabitants

Total Rainfall:

Rain-Fed Agriculture:

Irrigated Agriculture:

Incomaputo River Basin

Riparian Countries

| Area of Basin in Country | | |
|--------------------------|-----------------|-------|
| | km ² | % |
| Mozambique | 16,100 | 20.80 |
| South Africa | 47,700 | 61.63 |
| Swaziland | 13,600 | 17.57 |
| Total | 77,400 | 100% |

Organizational Structure

The Tripartite Permanent Technical Committee is the only organ established by the Interim IncoMaputo Agreement as an advisory committee without executive power.

Organizational Structure for Cooperation

The Tripartite Permanent Technical Committee (TPTC), which was established in 1983, is the joint body for cooperation covering the Incomati and Maputo Rivers. The Interim IncoMaputo Agreement re-established the TPTC as an advisory committee without executive power. The joint body is supposed to meet at least twice a year with the purpose of implementing the Interim IncoMaputo Agreement. The Chairmanship and the venue of meetings rotates among the signatory states.

List of Treaties/Agreements

| Date | Treaty Basin | Signatories | Treaty Name |
|--------------|-------------------|-------------------------------------|-------------------------------------------------|
| Feb 17, 1983 | Shared waters | Mozambique; South Africa; Swaziland | Tripartite Technical Committee |
| Feb 15, 1991 | Incomati, Komati, | Mozambique; South Africa; Swaziland | Water Ministers Meeting |
| Mar 13, 1992 | Komati, Maputo | South Africa; Swaziland | Joint Water Commission Treaty |
| Oct 7, 1992 | Komati, Kangwane; | South Africa | Utilization of Komati Water Resources Agreement |
| Aug 29, 2002 | Incomati, Maputo | Mozambique; South Africa; Swaziland | IncoMaputo Agreement |

Geographical Scope

The Incomati watercourse is the system of the Incomati River, which includes the tributaries Mazimechopes, Uanetze, Massintonto, Sabie, Crocodile, Komati Rivers, and the estuary and the Maputo watercourse is the system of the Maputo River, which includes the tributaries Pongola and Usuthu Rivers, and the estuary.

Functions/Mandate

The TPTC is an advisory committee without executive powers. It advises the contracting parties on technical, legal, administrative, and other reasonable measures related to the development and management of the Incomati and Maputo watercourse systems and it is to remain in force until superseded by another comprehensive water agreement.

Management Plans and Action Programs

In the Interim IncoMaputo Agreement, the three governments agreed on a list of “Reference Projects” to be implemented. Based on determining criteria, Reference Projects are mentioned for Mozambique, South Africa and Swaziland.

Monitoring and information system

The parties were required to exchange available information and data regarding the hydrological, geo-hydrological, water quality, meteorological, and environmental conditions of the watercourses in order to enable planning, development, and management of the shared watercourses. Any planned water resource development and water utilization projects would only commence if the provisions of the Revised SADC Protocol on the procedures of notifying other Riparian Countries of planned measures had been complied with. Prior to signing the Interim IncoMaputo Agreement, the TPTC had already adopted the “Resolution on the Exchange of Information and Water Quality.” However measures were also instituted to establish regular comparable monitoring systems, methods and procedures; and to report on the status and trends of the associated aquatic, marine, and riparian ecosystems.

Rules on Decision-Making and Procedure for Dispute Resolution

The TPTC shall adopt – by consensus – its rules of procedure that will govern the meetings. The Interim IncoMaputo Agreement further stipulates that any dispute shall be settled amicably through consultation and negotiations among the parties. In cases in which a dispute is not settled within one year of the date upon which such negotiations were requested, it may be submitted for arbitration by either Party. If the disputing parties do not agree on the subject matter of the dispute, the arbitration tribunal shall determine the subject matter according to its rules.

Financing of TPTC and Its Cooperative Structures

The 1983 Agreement stipulates that each government shall bear the cost of its representatives and the cost of any person it wishes to appoint as advisors. No specific provisions are mentioned in the Interim IncoMaputo Agreement of 2002 on funding.

Stakeholder Participation

No specific provisions.

Historical Record of Co-operation

In 1999, the TPTC decided to include the Maputo River system and to conduct a Joint Maputo Basin Study, which was completed in 2001. This decision broadened the agenda, which so far had mainly focused on the Incomati River. After more than three years of negotiations, the ministers of the riparian states signed the Interim IncoMaputo Agreement in 2002. Its major achievement was that the riparian states agreed on previously disputed hydrological data, a number of water management/environmental measures and a water sharing formula including secure water supply to Maputo city.

Challenges

Underdeveloped Mozambique not party to KOBWA, the river basin organization mandated to operate the dams, insufficient flow for environmental requirements, member states at different stages of development and insufficient funding.

References and Links

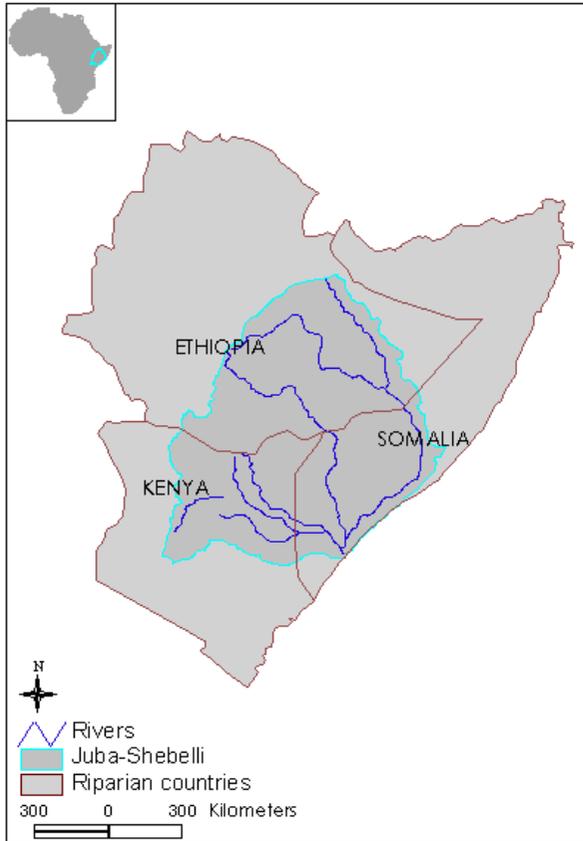
TPTC. 2002. Media Release: Signature of the IncoMaputo Agreement on Water Sharing. 29 August 2002, (http://www.dwaf.gov.za/communications/press_releases/2002/press_release_incomaputo_signing_29_Aug_02_wssd.doc)

Turton, Anthony R. 2004. Evolution of Water Management Institutions in Select Southern African International River Basins, in Asit K. Biswas, Olcay Ünver, and Cecilia Tortajada (eds.), *Water as a Focus for Regional Development*, Oxford University Press, Water Resources Management Series, pp. 251-289.

Turton, Anthony R. 2003. The political aspects of institutional development in the water sector: South Africa and its international river basins. University of Pretoria, May, (http://www.transboundarywaters.orst.edu/publications/related_rese..., download: 07.01.2005).

Vas, Alvaro Carmo and Pieter van der Zaag. 2003. *Sharing the Incomati Waters: Cooperation and Competition in the Balance*, UNESCO / IHP / WWAP, IHP-VI / Technical Documents in Hydrology, PC-CP series No. 14 (SC-2003/WS/46).

African River Basins



JUBA-SHABELLI BASIN

Name of Organization:

Administrative

Address:

Tel.

E-Mail:

Head of Organization:

Position:

Contact Person/People:

Position:

Address:

E-Mail:

Website

Year Launched:

Basic Data

Total Area: 803,500 km²

Length of River: 1,658 km

Total Population:

Total Rainfall: Varies from 200 mm/year to 1800 mm/year with a basin mean of 430 mm/year.

Rain-Fed Agriculture:

Irrigated Agriculture: Of the total irrigation

Juba-Shabelli Basin

potential of 323,000 ha less than 200,000 ha is under irrigation due to limitations on yearly available water.

Organizational Structure Organizational Structure for Cooperation

Riparian Countries

| Area of Basin in Country Km ² | | % |
|---------------------------------------------|----------------|-------------|
| Ethiopia | 367,400 | 45.72 |
| Kenya | 215,300 | 26.79 |
| Somalia | 220,900 | 27.49 |
| Total | 803,600 | 100% |

List of Treaties/Agreements

| Date | Treaty Basin | Signatories | Treaty Name |
|--------------|----------------|----------------------|-----------------------------------------------|
| Nov 22, 1933 | Dif (pools of) | Great Britain; Italy | Kenya-Italian Somaliland Boundary Notes |

Geographical Scope

The Shabelli and the Juba rivers originate in Ethiopia and merge in Somalia before entering the Indian ocean. In Kenya there is one tributary of Ewaso Ngiro river which drains the northern side of Mount Kenya, the Aberdares and the North and North East highlands.

Functions/Mandate

Management Plans and Action Programs

Monitoring and Information Systems

Rules on Decision-Making and Procedure for Dispute Resolution

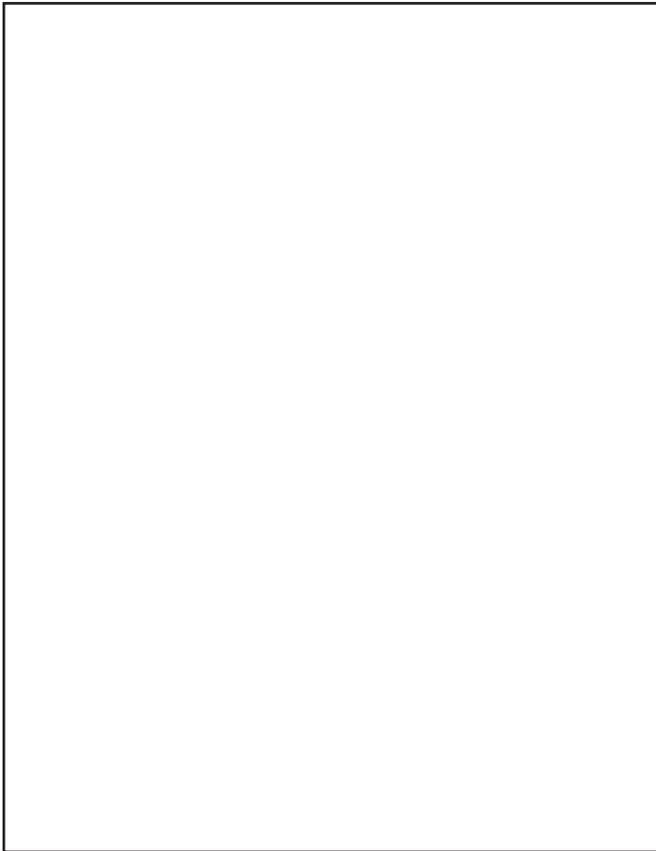
Financing of NBI and Its Cooperative Structures

Stakeholder Participation

Website:

Historical Record of Co-operation

References and Links



KOMATI RIVER BASIN

Name of Organization: Komati Basin Water Authority (KOBWA)

Administrative Address: Komati Basin Water Authority,
P. O. Box 518, Malelane 1320
South Africa.

Telephone: + 27 13 781 0317/9

Fax: +27 13 781 0320

Email: driekop@mweb.co.za

P.O.Box 678, PIGGS PEAK, Swaziland,

Telephone: (268) 4371463/4371460

Head of Organization: Chris Keevy

Position: Chief Executive Officer

E-Mail: chriskobwa@mweb.co.za, ckeevy@swazi.net

Website: www.kobwa.co.za

Year Launched: 1992

Basic Data

Total Area:

Length of River:

Total Population:

Komati River Basin

Total Rainfall:
Rain-Fed Agriculture:
Irrigated Agriculture:

Riparian Countries

| Area of Basin in Country | Km ² | % |
|--------------------------|-----------------|-------------|
| Mozambique | 14,600 | 31.2 |
| South Africa | 29,200 | 62.47 |
| Swaziland | 3,000 | 6.33 |
| Total | 44,800 | 100% |

Organizational Structure

The Komati River Basin Institutional Framework is comprised of South Africa, Swaziland and Mozambique. Policy matters are dealt with by the Joint Water Committee (JWC) and the Tripartite Permanent Technical Committee (TPTC), management matters are dealt with by the KOBWA Board and the Incomati Operating Task Group while operational issues are handled by the Komati Joint Operations Forum (KJOF). The KJOF is an operations forum where all water users in the Komati River Basin meet to discuss operational matters. The

Komati Basin Water Authority (KOBWA) is a bi-national organization established by South Africa and Swaziland to design, operate and maintain phase 1 of the Komati River Basin Development Project. KOBWA reports to the Joint Water Commission (JWC) which is a technical advisory body of the two Governments. Three members from each country represent each country at JWC. Where the water situation touches on Mozambique, such matters are then dealt with by the Tripartite Permanent Technical Committee (TPTC) which is comprised of representatives of the three countries. TPTC meets at least once a year while JWC meets at least once every two months.

Organizational Structure of Cooperation

The JWC acts as technical advisor to South Africa and Swaziland on all matters relating to the development and utilization of water resources of common interest. JWC possesses legal power in the territory of each party and comprises of two delegations representing both countries. Each delegation shall consist of no more than three members to be appointed by the signatories, one of whom shall be designated by that party as leader of its delegation. Additional advisors may be co-opted.

List of Treaties/Agreements

| Date | Treaty Basin | Signatories | Treaty Name |
|------|----------------|-------------------------------------------|-------------------------------------------------|
| 1991 | Komati | Mozambique; South Africa; Swaziland | Pigg's Peak Agreement |
| 1992 | Komati | South Africa; Swaziland | Komati Water Development and Utilization Treaty |
| 1992 | Komati | South Africa; Swaziland | JWC Treaty |
| 2002 | Komati, Maputo | Mozambique; South Africa; Swaziland | Interim Inco-Maputo Agreement |

Geographical Scope

This includes the Incomati, Komati and Maputo water courses.

Functions/Mandate

The functions and mandate of KOBWA relate to aspects of water management, environment and resettlement and corporate services for the authority. These entail design, operation and maintenance of phase 1 of the Komati River Basin Development Project, reduction of environmental degradation, management of resettlement programs and acquisition and servicing of loans. The Joint Water Commission acts as a technical advisor to the Parties on all technical matters relating to measures to alleviate short-term problems resulting from water shortages from any water resource of common interest; investigating the development of any water resource of common interest including the construction, operation, and maintenance of any water works in connection therewith; the joint development of water resources of common interest; the criteria to be adopted in the allocation of the utilizable portion of water resources; the prevention and exercise of control over pollution and soil erosion affecting water resources of common interest; and any other matter pertaining to the development of water resources and their utilization.

Management Plans and Action Programs

The responsibility of KOBWA is to implement Phase 1 of the Komati River Basin Development Project, which comprises the design, construction, operation, and maintenance of the Driekoppies Dam in South Africa (Phase 1a), part of the Komati River and the Maguga Dam in Swaziland (Phase 1b), part of the Komati River.

Monitoring and Information Systems

The JWC shall meet at least twice a year; the venue of the meetings may rotate, and the host provides the chairman and is responsible for the preparation and timely distribution of the proposed agenda, recording and distribution of the minutes, and provision of a suitable venue. And as a matter of procedure, each party shall supply information and plans relating to the development and utilization of the water resources of common interest to the Commission as the Commission may require for the performance of its functions.

Rules on Decision-Making and Procedure for Dispute Resolution

Decisions at operational level are referred to the KOBWA Board of Directors, which comprise three members from each country. Thereafter if no decision is reached or if the decision required hinges on policy the matter is referred to the JWC. If the decision required hinges on political issues or if no decision is reached at JWC the matter is referred to the Governments. The treaty also provides for cases where the Governments do not agree. Decisions of the Joint Water Commission are taken on the basis of consensus. Any dispute concerning the interpretation of the treaty shall, at the request of either party, be resolved through negotiations. In the event that the parties fail to settle a dispute within three months of the date of request, either party may submit the dispute for arbitration upon giving written notice of its intention to the other party.

Arbitration shall be conducted by a tribunal.

Financing of KOBWA and Its Cooperative Structures

KOBWA is financed in two different ways; (a) loans raised by KOBWA from private financial institutions. (b) Direct contributions by the Governments. Monies obtained through direct contributions by the governments are used for operational expenditure. For meetings of the Commission, each party is responsible for all costs incurred in connection with the attendance and participation of its delegation and of any person co-opted as an advisor. The state hosting a meeting meets the costs incurred in providing a venue, preparing and distributing the proposed agenda and recording and distribution of the minutes. All other costs incurred or liabilities accepted by the JWC in performing its functions and exercising its powers shall be shared equally by the parties unless otherwise agreed by the Commission.

Stakeholder Participation

No specific provisions are given but the organization's Institutional Structures for Re-settlement allows for participation of various

stakeholders under different organizations.

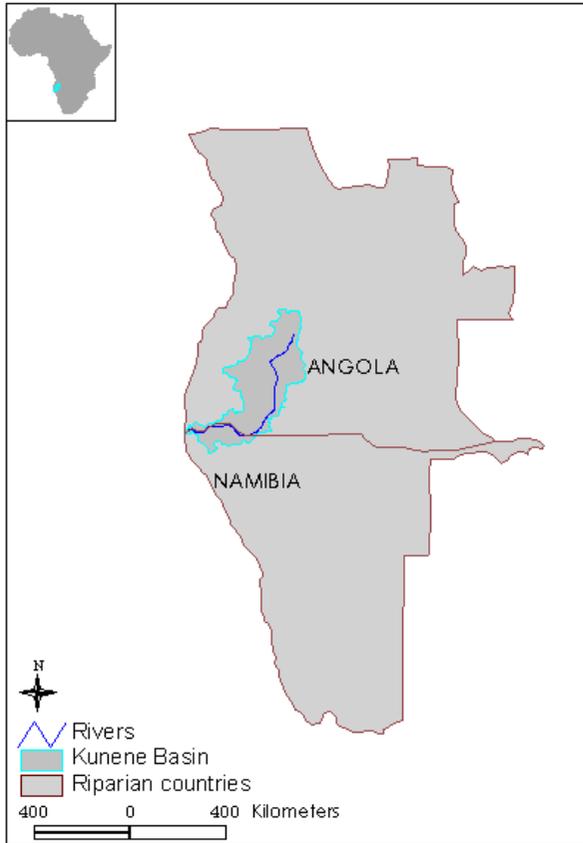
Historical Record of Co-operation

KOBWA originates from the Treaty on the Development and Utilization of the Water Resources of the Komati River Basin signed between Swaziland and South Africa in 1992. Also signed between the two countries in 1992 is the Joint Water Commission Treaty. Accompanying this treaty was the Agreement signed between Mozambique, South Africa and Swaziland in Pigg's Peak in 1991 (Pigg's Peak Agreement). Subsequent to these is the latest Interim Inco-Maputo Agreement signed between the three Countries at the World Summit on Sustainable Development in Johannesburg in 2002.

References and Links

Vas, Alvaro Carmo and Pieter van der Zaag. 2003. Sharing the Incomati Waters: Cooperation and Competition in the Balance, UNESCO / IHP / WWAP, IHP-VI / Technical Documents in Hydrology, PC-CP series No. 14 (SC-2003/WS/46).

African River Basins



<http://www.kobwa.co.za/profile.cfm>.

KUNENE RIVER BASIN

Name of Organization:

Administrative Address:

Telephone:

E-Mail:

Head of Organization:

Position:

Contact Person/People:

Position:

Address:

E-Mail:

Website

Year Launched:

Basic Data

Total Area: 110,000 km²

River Length: 1,050 km

Total Population: 1,988,000 inhabitants

Total Rainfall:

Rain-Fed Agriculture:

Irrigated Agriculture:

Kunene River Basin

Riparian Countries

| Area of Basin in | Country Km ² | % |
|------------------|----------------------------|-------------|
| Angola | 95,300 | 86.68 |
| Namibia | 14,900 | 13.32 |
| Total | 110,200 | 100% |

Organizational Structure

The main organ is the Permanent Joint Technical Commission (PJTC).

Organizational Structure for cooperation

The Permanent Joint Technical Commission (PJTC) is an advisory body established to consult the respective governments on the development of the Kunene River and to oversee the implementation of common infrastructure projects.

List of Treaties/Agreements

| Date | Treaty Basin | Signatories | Treaty Name |
|--------------|----------------|--------------------------|-------------------------------------------------|
| July 1, 1926 | Cunene, Kunene | Portugal; South Africa | Cunene Water Use Regulation |
| Apr 29, 1931 | Cunene | Portugal; South Africa | Angola/S. Africa Boundary Notes |
| Jan 21, 1969 | Cunene | Portugal; South Africa | Water Resource Development Agreement |
| July 1, 1996 | Shared Waters | Mozambique; South Africa | Joint Water Commission Terms of Reference |
| Oct 1, 2001 | Kunene | Angola; Namibia | Completion/Expansion of Water Supply Memorandum |

Geographical Scope

The Kunene River Basin (not specifically stated, but often referred to in the agreements).

Functions/Mandate

In 1969 the Permanent Joint Technical Committee was established as an advisory body to study and report on matters relating to the general agreement on the development of the water resources of the basin. It was particularly instructed to oversee the implementation of development projects on the river encompassing the construction of three dams, a power station, and a pumping station. The mandate was renewed in the agreement of 1990.

Management Plans and Action Programs

The 1969 Agreement defined the activities of the first phase of development as construction of a dam at Gove in Angola to regulate the flow of the Kunene River, construction of a dam at Calueque upstream the Ruacana Falls for further regulation of the river and to meet the requirements of the power station at Ruacana falls and a pumping station at Calueque for irrigation purposes and construction of the Matala dam in Angola. The Calueque-Ruacana Scheme was never completed and partly destroyed during the Angolan civil war. The Gove dam was also damaged. In 1990 it was agreed to repair the dams. Currently, development of the Epupa hydroelectric scheme at the Epupa Waterfall is being pursued. The 1990 agreement revitalizing the development works on the Kunene provided for the set up of a Joint Operating Authority to ensure the maximum beneficial regulation at Gove that is needed for optimum power generation at Ruacana and to control the withdrawal of water along the middle reaches of the Kunene. The Authority was also expected to ensure the continuous operation and maintenance of the water pumping works at Calueque and the diversion weir at Ruacana.

Monitoring and Information Systems

No special provisions on monitoring and information were provided in the agreements.

Rules on Decision-Making and Procedure for Dispute Resolution

In the PJTC decisions, four members form a quorum, provided that at least two members of each delegation are present. Decisions are taken unanimously. If the Commission fails to reach a decision, the dispute is referred to the Governments for negotiation.

Financing of PJTC and Its Cooperative Structures

Each government is responsible for the expenses of its own delegation. Joint expenses are shared equally by the two Governments.

Stakeholder Participation

No specific provisions.

Kunene River Basin

Historical Record of Co-operation

The first transboundary cooperation in the Kunene River Basin dates as far back as 1926 when South Africa and Portugal signed an agreement to regulate the use of the water of the Kunene River for the purposes of generating power, flood prevention, and irrigation. No infrastructure developments were undertaken until 1969 when an agreement was reached to build three dams to regulate the river and generate power. The development was overseen by the Permanent Joint Technical Commission established with the 1969 Agreement. In 1975 a civil war broke out immediately after Angola had gained independence. The Ruacana-Calueque project was not completed and severely damaged during the conflict. Angola and Namibia, after its independence in 1990, agreed to reactivate agreements from 1969 and to repair the damaged dams. Two agreements were signed. The first agreement concerned the completion of the planned dams and power plants along the Kunene and the development of future schemes in order to secure

the countries future needs for electricity. The second one concerned general cooperation between the countries and established the Angolan-Namibian Joint Commission of Co-operation. The Joint Commission of Co-operation deals with joint cooperative efforts on a number of issues, one of which is water.

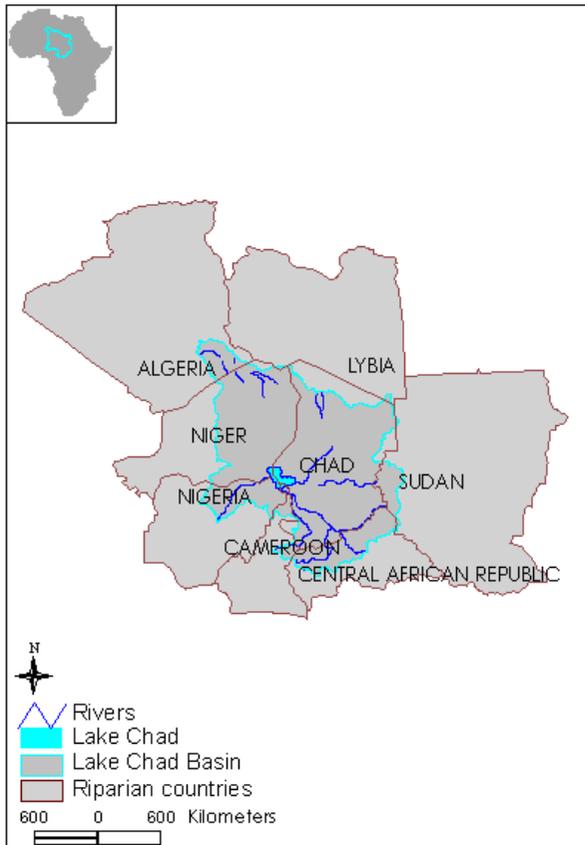
Challenges

Arid river catchment, commitment of water to irrigation in Namibia, inter-basin/inter-state water transfer, environmental/social impediments to hydropower development, different levels of development and limited PJTC mandate.

References and Links

Meissner, R. 2000. Hydropolitical Hotspots in Southern Africa: The Case of the Kunene River, in: Water for Peace in the Middle East and Southern Africa. Green Cross International. www.grnnet.gov.na/News/Archive/2001/October/Week4/namibia.htm

African River Basins



LAKE CHAD BASIN

Name of Organization: Lake Chad Basin Commission (LCBC)

Administrative Address:

BP 727 Telephone: 235524137

E-Mail: lcbc@intnet.td

Head of Organization: Muhamad Adamu

Position: Executive Secretary

E-Mail: msaadamu@yahoo.com

Contact Person/People: Tam Lambert

Position: Assistant Executive Secretary

E-Mail: tam@intnet.td

Website: www.oieau.fr/ciedd/www.cblt.org

Year Launched: 1964

Basic Data

Total Area: 2,388,700 km²

Length of River:

Total Population: About 22 million

Total Rainfall: Varies from 100 mm/year in the North to 1,500 mm/year in the Southern parts.

Evaporation: It exceeds 2,000 mm/year at the centre of the basin.

Lake Chad River Basin

Rain-Fed Agriculture: Fishing, pastoral sheep, cattle and camel rearing provide the only support to livelihoods of the local community in the region in addition to agriculture.

Irrigated Agriculture: A few large scale irrigation schemes (polders) developed on parts of the lakeshore have proven totally unsuited to the hydrological, climatic and cultural conditions of the region.

Riparian Countries

| Area of Basin in Country: | | |
|---------------------------|------------------|-------------|
| | km ² | % |
| Algeria | 90,000 | 3.77 |
| Cameroon | 46,800 | 1.96 |
| Central African Republic | 218,600 | 9.15 |
| Chad | 1,079,200 | 45.18 |
| Chad, Claimed by Libya | 12,300 | 0.51 |
| Libya | 4,600 | 0.19 |
| Niger | 674,200 | 28.23 |
| Nigeria | 180,200 | 7.54 |
| Sudan | 82,800 | 3.47 |
| Total | 2,388,700 | 100% |

Organizational Structure

The topmost organ of LCBC is the Meeting of Heads of State which is the main policy setting unit. It has a permanent bureau with an Executive Secretary. Subordinate to the Executive Secretary are an Assistant Executive Secretary, a Financial Controller and four departments of Administration and Finance; Planning and Project Execution;

Documentation, Information, Remote Sensing and Advanced Technologies and Water Resources.

Organizational Structure for Cooperation

Since 1994, the Lake Chad Basin Commission (Commission du Bassin du Lac Tchad, CBLT) has consisted of ten members, two members from each member state (Commissioners), and it meets at least once a year. Its policy-setting unit is the Meeting of the Heads of State. The Commission has a permanent bureau headed by an Executive Secretary. With the adoption of the Strategic Action Program (SAP), a Steering Committee has been established for implementation with two directors (one for the technical management of large-scale water resources projects and another for environmental policy management issues). LCBC has further introduced a Basin Committee for Strategic Planning to coordinate activities with the nation states and across the key ministries such as environment, agriculture, and finance. The personnel of the LCBC are recruited from among the ministries and administration of the member states; the Executive Secretary is always from Nigeria. It is stipulated that personnel from any member state does not exceed one-third.

List of Treaties/Agreements

| Date | Treaty Basin | Signatories | Treaty Name |
|--------------|--------------|---------------------------------|-------------------------------------------------------------|
| May 1964 | Lake Chad | Cameroon;Chad; Niger;Nigeria | Convention and Statutes Relating to the Development of LCBC |
| October 1973 | Chad | Cameron;Chad; Niger;Nigeria | Agreement Creating a Fund for the Development of LCBC |

Geographical Scope

The conventional basin of Lake Chad incorporates the upper basins of Logone-Chari and Komadougou-Yobe regimes, and encompasses the entire hydrographic network supplying water to Lake Chad, Yaeres, and the phreatic water-table around the lake.

Functions/Mandate

The LCBC's functions are advisory and coordination in nature and can be summarized as follows: preparing general regulations which shall permit the full application of the principles set forth in the present convention and its annexed statute, and to ensure their full application; collecting, evaluating, and disseminating information on projects prepared by the member states and recommending plans for common projects and joint research programs within the basin; keeping close contact between the contracting parties with a view to ensuring the most efficient utilization of the waters of the basin; following up on the progress of the execution of surveys and works and keeping the member states informed; drawing up common rules regarding navigation and transport; examining complaints and promoting the settlement of disputes and the resolution of conflicts; promoting regional cooperation and coordination of regional programs; planning, mobilizing and following up national projects with regional implications.

Management Plans and Action Programs

An inter-basin water transfer scheme is planned whereby Lake Chad could be supplied with water from the Congo basin via a pipeline and a navigation channel. Also planned is the construction of a dam at Palambo (CAR) for electricity generation and for expansion of irrigated agricultural land. The Republic of Congo (Brazzaville) has already released a no-objection note. Feasibility studies will be undertaken with funds from the member states and international donors, which will also assess the social, economic, and ecological impacts. Since the adoption of the Strategic Action Plan (1998), GEF has supported a program called Reversal of Land and Water Degradation Trends in the Lake Chad Basin Ecosystem to set up coordinated, integrated, and sustainable management of the international waters and natural resources of the Lake Chad basin and to reverse the degradation trend of soils and water resources. Mega-Chad project for controlling land degradation, inter alia Promotion of the Use of Renewable Energy Resources and Conservation of the Flora Species in the Dry Lands of Mega Chad of the West African Sub-region is supported by UNEP since 2001.

Monitoring and Information Systems

The Convention and Statutes require that member states refrain from adopting any measures likely to exert a marked influence either upon the extent of water losses, sanitary conditions of the water resources, biological characteristics of the fauna and flora of the Basin or the lake without referring to the Commission beforehand. In particular, the member states agree not to undertake in that part of the Basin falling within their jurisdiction any work in connection with the development of water resources or the soil likely to have a marked influence upon the system of the water courses and levels of the Basin without adequate notice and prior consultation with the Commission.

Rules on Decision-Making and Procedure for Dispute Resolution

The Commission shall draw up its own rules of procedure, and decisions of the LCBC shall be adopted unanimously. LCBC requires that any dispute concerning the interpretation of the implementation of the present Convention, which has not been determined by the Commission, shall be submitted to the Commission of Mediation, Conciliation and Arbitration of the Organization of African Unity for the purpose of decision.

Financing of LCBC and Its Cooperative Structures

The personnel of the LCBC are recruited from among the ministries and administration of the member states and are paid out of the LCBC budget. It is stipulated that personnel from any member state does not exceed one-third. The costs of the Commission are shared among the member states according to a defined formula. At present, Nigeria contributes 52%, Cameroon 26%, Chad 11%, Niger 7%, and Central African Republic 4% towards the annual budget.

Stakeholder Participation

Although no specific provisions are in place, stakeholder participation is enhanced by the activities of user groups whose functions range from advisory to planning and management and from coordination to dispute settlement to procurement of credits and recovery of water charges.

Historical Record of Cooperation

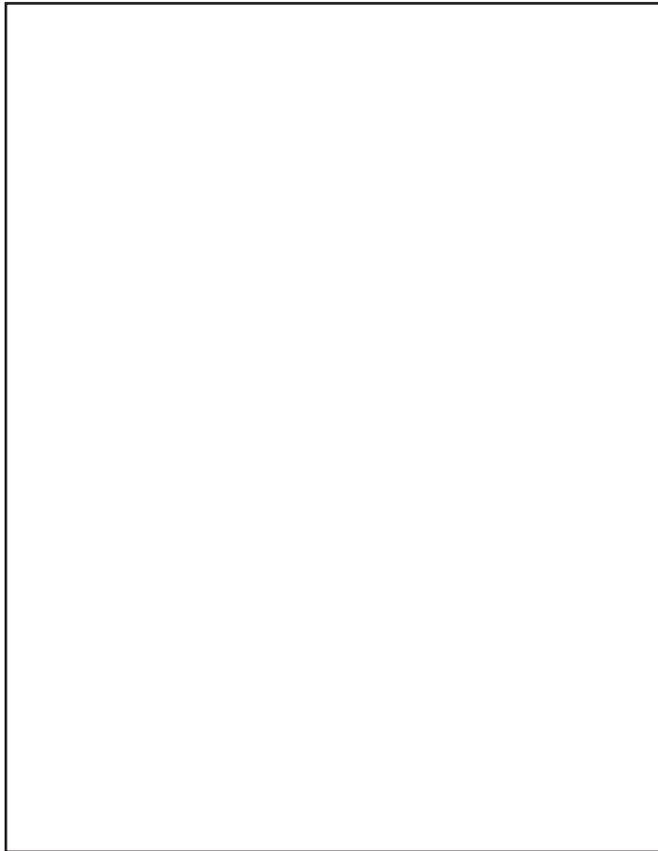
A number of bilateral commissions have been established, whose relation to the LCBC has yet to be clarified. During the 1970s and 1980s the Lake Chad Basin Commission was also involved in settling border disputes between Nigeria and Chad. On the advice of the Heads of State, separate commissions have been established by the LCBC for dealing with these issues.

Challenges

Decreasing rainfall, drought and desertification, environmental degradation, increasing water demand, high poverty levels, institutional capacity building, funding problems and the need to strengthen cooperation.

References and Links

- i) LCBC, UNEP/UNSO/FAO, Executive Summary, Master Plan for the Development and Environmentally Sound Management of the Natural Resources of the Lake Chad Conventional Basin, June 1992.
- ii) LCBC/UNDP, Strategic Action Plan, Integrated and Sustainable Management of the International Waters of the Lake Chad Basin, May, 1998.
- iii) LCBC, Integrated River Basin Management, Challenges of the Lake Chad Basin, Vision 2025.
- iv) NEPAD, Short Term Action Plan for Infrastructure, Main Report, 2002
- v) Burchi, Stefano and Melvin Spreij. 2003. Institutions for International Freshwater Management. Report for FAO Development Law Series, FAO Legal Office, PC-CP series No.3
- vi) www.cblt.org/eng.htm



LAKE VICTORIA BASIN

Name of Organization: Lake Victoria Basin Commission (LVBC)

Administrative Address:

P. O. Box 1096, Arusha, Tanzania

Telephone: +255-27-2504253/8, 2504255

E-Mail: lvdp@eachq.org

Head of Organization: Tom Okurut Dr.

Position: Executive Secretary

Year Launched: 2003

Basic Data

Total Area: 181,000 km²

Total Population: 25 million inhabitants

Total Rainfall: Variable from about 800 mm/year in the Eastern part of the catchment to over 2000 mm/year over the Central-Western part of the lake.

Rain-Fed Agriculture: The main source of livelihood in the basin for about 80% of the population.

Irrigated Agriculture: Little irrigation is executed in the basin but this is increasing

Lake Victoria Basin

with substantial quantities of water diverted from the lake to irrigate flowers.

Riparian Countries

| Area of Basin in Country km ² | | % |
|---------------------------------------------|----------------|-------------|
| Burundi | 13,060 | 7.2 |
| Kenya | 38,913 | 21.5 |
| Rwanda | 20,550 | 11.4 |
| Tanzania | 79,570 | 44.0 |
| Uganda | 28,857 | 15.9 |
| Total | 180,950 | 100% |

Organizational Structure

As an institution of the East African Community (EAC) and as provided for in the Treaty establishing the Community, the Commission operates within the following organizational structure, the Sectoral Council, Coordination Committee, Sectoral Committees and a Secretariat of the Commission. The Commission Secretariat is run by an Executive Secretary and two Deputy Executive Secretaries. The Headquarters of the Secretariat will be in Kisumu, Kenya.

Organizational Structure for cooperation

The Sectoral Council comprising of national ministers is the policy making unit of LVBC while the Coordination Committee comprises the corresponding permanent secretaries. Sectoral Committees will be established on demand upon proposal of the Coordination Committee. Members of Sectoral Committees will be senior public officials of the partner states, heads of public institutions, representatives of regional institutions and representatives of business, industry, and civil society. The Secretariat, headed by the Executive Secretary, is a permanent unit to support and assist the Commission's bodies in coordinating their work and in coordinating with the EAC-Secretariat, the member states, and the donors. The Executive Secretary will be appointed by the Sectoral Council for a period of five years. National Focal Points will be established in all member countries to coordinate the work of national institutions and the LVBC. The Lake Victoria Basin Commission was established as an institution of the EAC. The Sectoral Council should establish links with other Sectoral Councils of the EAC if appropriate. Both the Sectoral Council and the Coordination Committee will hold meetings twice a year.

List of Treaties/Agreements

| Date | Treaty Basin | Signatories | Treaty Name |
|--------------|---------------|-------------------------|----------------------------------|
| Nov 29, 2003 | Lake Victoria | Kenya; Tanzania; Uganda | Sustainable Development Protocol |

Geographical Scope

Lake Victoria Basin

Functions/Mandate

The broad functions of the Commission are to promote, facilitate and coordinate activities of different actors towards sustainable development and poverty eradication in the Lake Victoria Basin by harmonization of policies, laws, regulations and standards, and promotion of stakeholders participation in sustainable development of natural resources.

Management Plans and Action Programs Plans/Programs/Projects

The plans for the next five years of the 2006 – 2010 Development Strategy is to consolidate achievements already realized, and continue performing the Commission institutional functions. Coordinating and liaising with major stakeholders in the ongoing and new regional projects including Lake Victoria Environmental Project phase II (LVEMP II), Mount Elgon Ecosystem Conservation Project (MERCEP), the safety of Navigation on Lake Victoria and capacity building. A Vision and Strategy document was signed in 2004, which shall be the guiding document in identifying the scope, priorities, and type of activities to be included in the Commission's work program.

Monitoring and Information Systems

The Secretariat is in charge of disseminating information on the Commission to stakeholders and the international community. The functions of the Secretariat are to establish a regional data base and promote sharing of information, the development of information systems and data exchange; to disseminate information on the Commission to stakeholders and the international community; to mobilize resources for the implementation of projects and programs of the Commission; and to develop a sustainable funding mechanism for facilitating the sustainable development of the basin. Each Partner State shall periodically, at intervals to be determined by the Council, report on measures, which it has taken for the implementation of the provisions of this Protocol and their effectiveness in meeting the objectives of this Protocol.

Rules on Decision-Making and Procedure for Dispute Resolution

Decisions at all levels are taken by consensus. In the event of a dispute between Partner States concerning the interpretation or application of the Protocol, the Partner States concerned shall seek solution by negotiation. If the Partner States do not resolve the dispute by negotiating, either Partner State or the Secretary General of EAC may refer such dispute to the East African Court of Justice in accordance with Articles 28 and 29 of the Treaty. The decision of the East African Court of Justice on any dispute referred to it under this Protocol shall be final. The Sectoral Council promulgates its own rules and procedures of decision-making consistent with the Treaty. The Protocol stipulates that, if a conflict between the member states cannot be settled by negotiations, each of the contesting parties or the Secretary General of the EAC can bring the conflicting matter to the East African Court of Justice. Its decisions are final.

Financing of LVBC and Its Cooperative Structures

The sources of funds for the Commission shall be from the East African Community budget, stakeholders' contributions, development partners, and other such sources as shall be established by the Sectoral Council.

Stakeholder Participation

Stakeholders are represented in the Sectoral Committees (e.g. senior officials of partner states, heads of public institutions, representatives of regional institutions, representatives from sectors covered under this Protocol, business, industry, and civil society). Public participation in planning and decision-making is promoted by the

protocol. The Secretariat is required to disseminate information on the Commission to stakeholders and the international community. Projects and Programs are derived through an intensive participatory approach involving the partner states. There has been established "Focal Point Officers" for the Commission in each country who coordinate activities at country level. In addition, Civil Society and Private Sector is effectively being involved as depicted in the Organisation structure.

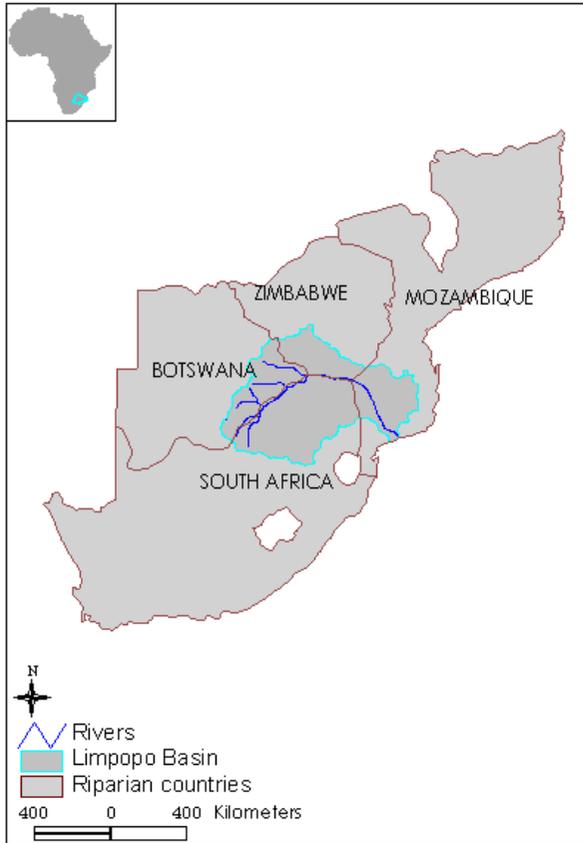
Historical record of Cooperation

When the East African Community (EAC) was re-established by Kenya, Tanzania and Uganda in 1999, the EAC treaty provided for the joint management of transboundary water catchment areas. Lake Victoria has been explicitly mentioned as one of the most important shared natural resources. The basin has been declared as an Economic Growth Zone, and the EAC Secretariat has adopted the Lake Victoria Development Program and established the Committee for Lake Victoria Development. This has been a decisive impulse for establishing the Lake Victoria Basin Commission. The Partnership Agreement (2001) between the EAC and the international donors established long-lasting relationships to promote the sustainable development of the basin. A Partnership Consultative Committee has been entrusted with the implementation of the Partnership Agreement, and a Partnership Fund has been set-up. The EAC created a unit at the EAC-Secretariat and a Policy Advisory Body for implementing the program.

References and Links

Wulf Klohn and Mihailo Andjelic (1999) Lake Victoria: A Case in International Cooperation, FAO.

African River Basins



LIMPOPO RIVER BASIN

Name of Organization: Limpopo Water Course Commission (LIMCOM)

Telephone:

E-Mail:

Head of Organization:

Position:

Contact Person: Mr. Beyers Havenga

Position: Chair, Technical Taskforce (LBPTC)

Address:

E-Mail: beyersh@dwaf.gov.za

Website:

Year Launched: 2003

Basic Data

Total Area: 414,800 km²

Length of River: 1750 km

Total Population: 14 million (2004 est.)

Total Rainfall: Varies from 290 mm/year to 1040 mm/year with a mean of 530 mm/year.

Rain-Fed Agriculture:

Irrigated Agriculture: The irrigation potential in this basin is estimated at 295,000 ha of which 242,000 ha are presently irrigated.

Limpopo River Basin

Riparian Countries

| Area of Basin in Country | | % |
|--------------------------|-----------------|-------------|
| | km ² | |
| Botswana | 81,500 | 19.65 |
| Mozambique | 87,200 | 21.02 |
| South Africa | 183,500 | 44.25 |
| Zimbabwe | 62,600 | 15.08 |
| Total | 414,860 | 100% |

Organizational Structure

At the moment the Council which comprises of permanent members from member states is the only permanent structure. But other organs including a secretariat are planned.

Organizational Structure for Cooperation

The principal organ of the Limpopo Watercourse Commission (LIMCOM) is the Council, which consists of the member states' delegations. Each government appoints three permanent members. Additionally, each delegation is allowed to be accompanied to the meetings by no more than three advisors. The Council can consult experts and establish working groups if necessary. The Council meets at least twice a year.

List of Treaties/Agreements

| Date | Treaty Basin | Signatories | Treaty Name |
|--------------|---------------|----------------------------------------------|--------------------------------|
| Feb 17, 1983 | Shared Waters | Mozambique; South Africa; Swaziland | Tripartite Committee Agreement |
| Nov 27, 2003 | Shared Waters | Botswana; Mozambique; South Africa; Zimbabwe | Formation of LIMCOM Agreement |

Geographical Scope

This covers the Limpopo River and its tributaries of the Shashi and Elephant rivers.

Functions/Mandate

The objectives of LIMCOM are to advise the Contracting Parties and provide recommendations on the uses of the Limpopo, its tributaries, and its waters for purposes and measures of protection, preservation and management of the Limpopo. LIMCOM is a legal authority which advises the member states and provides recommendations on the uses, protection, preservation, and management of the Limpopo and its tributaries. The Council advises the Contracting Parties on the following matters, measures and arrangements to determine the long-term safe yield of water; the equitable and reasonable utilization of the Limpopo to support sustainable development in the territory of all member states; all aspects related to the efficient and effective collection, processing and dissemination of data and information and the development of contingency plans, investigations, and studies.

Management Plans and Action Programs

No information available.

Monitoring and Information Systems

The Council advises the Contracting Parties on all aspects related to the efficient and effective collection, processing and dissemination of data and information with regard to the Limpopo.

Rules on Decision-Making and Procedure for Dispute Resolution

Decisions are adopted on the basis of consensus as long as a quorum of three delegations is realized. In the case of a dispute the conflicting parties are required to enter into negotiations. If a solution cannot be reached within six months, the dispute can be referred to the SADC Tribunal unless the parties agree otherwise. Decisions of the Tribunal are final and binding.

Financing of LIMCOM and Its Cooperative Structures

Each member state covers the costs of its delegation. Meetings are financed by the hosting member state. All further costs or liabilities incurred by the Commission are equally covered by all member states.

Stakeholder Participation

Articles in the agreement require the Council to determine to what extent the inhabitants of the territory of each member state shall participate in the planning, utilization, sustainable development, protection, and conservation of the Limpopo.

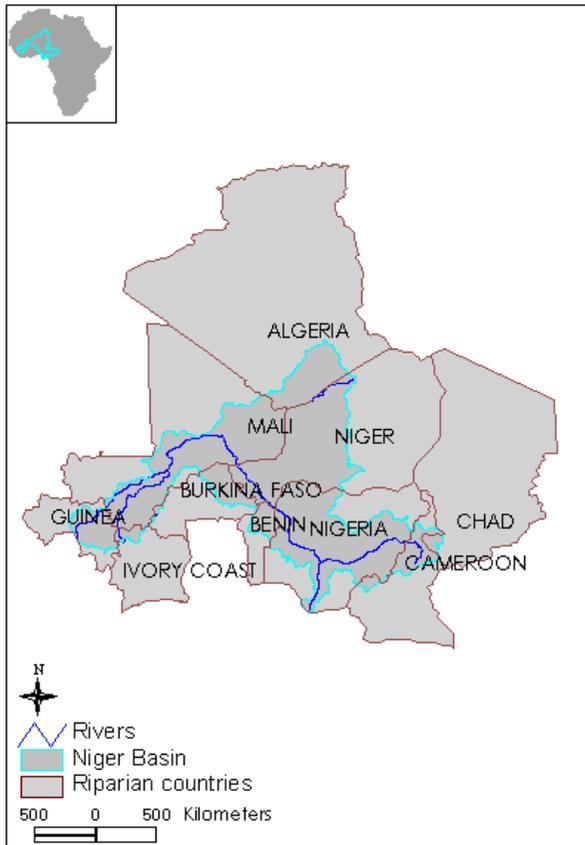
Historical Record of Co-operation

In 1986 the riparian states signed an agreement establishing the Limpopo Basin Permanent Technical Committee (LBPTC) as an advisory body for the development of the water resources of the Limpopo. The LBPTC lacked an organizational structure and formal decision-making and dispute resolution procedures, and remained inactive for almost a decade mainly due to the political situation in Southern Africa. After the political change in 1994, and following the intervention of the SADC Water Sector Coordination Unit (SADC-WSCU) and the decision of the SADC-WSCU and the LBPTC to develop an action plan to tackle water-related diseases in the Limpopo basin finally an agreement was reached. In 2003 the agreement establishing the Limpopo Water Basin Commission (LIMCOM) was signed as a successor to the LBPTC. Bilateral institutions like the Joint Permanent Technical Committee formed by Botswana and South Africa in 1983 and the Joint Water Commission formed by South Africa and Mozambique in 1996 still exist alongside the LIMCOM.

References and Links

Wirkus, L. and Böge, V. 2005. Afrikas internationale Flüsse und Seen. Stand und Erfahrungen im grenzüberschreitenden Wassermanagement in Afrika an ausgewählten Beispielen. Gutachten im Rahmen des Forschungsprojektes „Grenzüberschreitendes Wassermanagement in Afrika“ des Bundesministeriums für wirtschaftliche Zusammenarbeit und Entwicklung. Erster Entwurf, Jan

African River Basins



NIGER RIVER BASIN

Name of Organization: Niger Basin Authority (NBA)

Administrative Address: NBA Secretariat,
P.O.Box 729 Telephone:+227 72 31 02

Fax:+227 72 42 08, Niamey, Niger

E-Mail: abnsec@intnet.ne

Head of Organization:

Mr Mohammed Bello TUGA

Position: Executive Secretary

Address: P. O. Box 7296, Niamey, Niger

E-Mail: abnsec@intnet.ne

Website: www.abn.ne/webeng

Year Launched: 1980

Basic Data

Total Area: 2,113,200 km²

Length of River: 4,200 km

Total Population: 109 million inhabitants

Total Rainfall: Varies from 1200 mm/year to 3000 mm/year in Guinea zone to 500 mm/year to 1200 mm/year in

Niger River Basin

Sudanese zone to 100 mm/year to 500 mm/year in Sahelian zone

Rain-Fed Agriculture:

Irrigated Agriculture: The total irrigation potential in the basin is about 2.8 million ha of which about 930,000 ha are presently irrigated.

Other: High hydropower potential of about 30,000 GWH with a current installation of 7000 GWH.

Riparian Countries

| Area of Basin in Country | km ² | % |
|--------------------------|------------------|-------------|
| Algeria | 161,300 | 7.63 |
| Benin | 45,300 | 2.14 |
| Burkina Faso | 82,900 | 3.93 |
| Cameroon | 88,100 | 4.17 |
| Chad | 16,400 | 0.78 |
| Ivory Coast | 22,900 | 1.08 |
| Guinea | 95,900 | 4.54 |
| Mali | 540,700 | 25.58 |
| Niger | 497,900 | 23.56 |
| Nigeria | 561,900 | 26.69 |
| Sierra Leone | 50 | 0.00 |
| Total | 2,113,350 | 100% |

Organizational Structure

The Summit of Heads of State is responsible for policy/decision-making and the general development strategy of NBA. NBA settles all issues that remain unresolved by the Council of Ministers. The Council is responsible for decision-making and the supervision of the Secretariat based on advice from the Technical Committee. The secretariat is manned by two directorates, the Technical and Administration and Finance directorates. The executive secretary is responsible for the management of the authority and execution of its programs. He is supported by a Legal Advisor and a Donors Advisory Committee. Finances are controlled by an Internal Auditor and a Financial Controller.

Organizational Structure for cooperation

The NBA is an intergovernmental organization that seeks to ensure integrated development of the basin through stronger international cooperation. Each member state appoints representatives to serve as experts on the Technical Committee of Experts. The Committee meets according to a schedule approved by the Council and prepares the Council sessions.

African River Basins

List of Treaties/Agreements

| Date | Treaty Basin | Signatories | Treaty Name |
|----------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| Feb 26, 1885 | Congo, Niger | Austria-Hungary; Belgium; Denmark; France; Germany; Great Britain; Italy; Netherlands; Norway; Portugal; Russia; Spain; Sweden; Turkey; USA | General Agreement |
| April 20, 1921 | Niger | France; Great Britain; | Barcelona Convention |
| Oct 26, 1963 | Niger | Cameroon; Chad; Dahomey; Guinea; Mali; Niger; Nigeria; Upper Volta | Navigation/Economic Cooperation Agreement |
| Nov 25, 1964 | Niger | Benin; Burkina Faso; Cameroon; Chad; Ivory Coast; Guinea; Mali; Niger; Nigeria | River Niger Commission-Transport Agreement |
| Nov 21, 1980 | Niger | Benin; Cameroon; Chad; Ivory Coast; Guinea; Mali; Niger; Nigeria; Upper Volta | Niger Basin Authority Convention |
| Oct 27, 1987 | Niger | Algeria; Benin; Burkina Faso; Cameroon; Chad; Guinea; Ivory Coast; Mali; Niger; Nigeria; | Revised Basin Financial Procedures |
| Oct 29, 1987 | Niger | Benin; Burkina Faso; Cameroon; Chad; Ivory Coast; Guinea; Mali; Niger; Nigeria | Revised Convention on NBA Creation |
| July 12, 1988 | Niger | Mali; Niger | Utilization of Niger Water Resources |
| July 18, 1990 | Niger | Niger; Nigeria | Sharing of Common Waters |
| Jan 14, 1999 | Niger | Benin; Niger | Hydroelectric Management |

Geographical Scope

This includes the Niger River which originates from Guinea with its tributaries of Bani, Gouroval, Dargol, Sirba, Gouroubi, Diamangou and Tapoa, all originating from Burkina Faso. The other tributaries include Mekrou, Alibori and Sota originating from Benin and Benue from Chad.

Functions/Mandate

The NBA aims to promote cooperation among the member states and to ensure integrated development of the basin through development of its resources in the fields of energy, water resources, agriculture, forestry, transport, communications, and industry. Special provisions are made for environmental damage prevention and control, including prevention and control of water pollution and promotion of human health as well as flora and fauna in the basin. The particular objectives are harmonizing and coordinating the national policies of the member states, designing, implementing and maintaining common projects as well as preparing and implementing an integrated development plan for the basin.

Management Plans and Action Programs

The NBA has conducted several projects to tackle specific problems in the basin such as aquatic weed control, desertification control and the promotion of biomass gas production and use. There is also an ongoing project (TRI-NIGER) on "Reinforcement of the NBA capacity on conflict resolution among its member states". One other major project is HYDRONIGER, with the objective of establishing an operational hydrological forecasting system, to assist the member states in their drought and flood control activities, and to provide data for agricultural, hydro-power, navigation, and other development activities on the Niger and its tributaries. The forecasting system is currently (2000) the largest in West Africa, and the most wide-spread.

The system allows for data collection via satellite covering eight of the nine member states; only Chad has not been covered due to internal problems. Plans to modernize the HYDRONIGER system are underway. There was also a Three-year Action Plan (2000-2002) aiming at strengthening institutional capacity, developing regional projects to strengthen the co-ordination, monitoring, and control of natural resources, conducting basic studies and implementing pilot projects with a view to achieving a long term integrated development of the basin, developing information, publicity, and documentation activities and intensifying collaboration with international institutions. Two other strategic projects, the GEF project on "Reversal of Environmental Degradation Tendency in the Niger Basin" and the development of a Strategic Action Plan supported by the World Bank were also undertaken.

Monitoring And Information Systems

The NBA keeps all member states informed on important developments. The member states are obliged to report any project or work they intend to undertake within the basin. Monitoring and data collection are also major activities for purposes such as water quality control and flood forecasting. The NBA Documentation Centre and a Secretariat quarterly Bulletin are used to facilitate information dissemination.

Rules on Decision-Making And Procedure for Dispute Resolution

Recommendations and resolutions of the Council of Ministers are adopted by consensus. Disputes over the interpretation or implementation of the Convention are settled through direct negotiations. If a consensus cannot be reached, the dispute can be brought before the Summit of the Heads of State and Government by one of the member states.

Financing of NBA And Its Cooperative Structures

Each member state contributes to the budget of the NBA on the basis of a sharing formula that was agreed upon by the states and last revised in 2000. The contribution to the budget ranges from 30% for Nigeria to 1% for Chad. The NBA also seeks financial support from external donors.

Stakeholder Participation

There are no specific provisions for stakeholder participation in the agreements. Stakeholders can access information through the NBA's Documentation Centre, and a quarterly information bulletin which is published by the Secretariat.

Historical record of cooperation

The Niger River Commission was established in 1964 by Agreement of the nine Riparian Countries. It was originally limited to the control of navigation and transport on the Niger. The agreement was amended in 1973 resulting in the reorganization of administrative, executive, and policy-making structures and changing the role of the Commission from a controlling to an implementation agency. As a successor to the Commission, the Convention establishing the Niger Basin Authority was signed in November 1980. Functions

were extended to cover data collection, planning, regulation of water use and navigation, environmental matters, irrigation, and agricultural development. The Convention was revised once more in 1987 in order to redefine the objectives of the NBA, to adopt a more focused development program, to restructure the Secretariat and improve the financial situation of the authority. Finally in 1998, a resourceful leadership emerged and with the cooperation and assistance of the countries and donors, the NBA was revitalized. Projects like the HYDRONIGER have been revamped and new donor support has initiated new projects including the development of a shared vision for the future development of the basin.

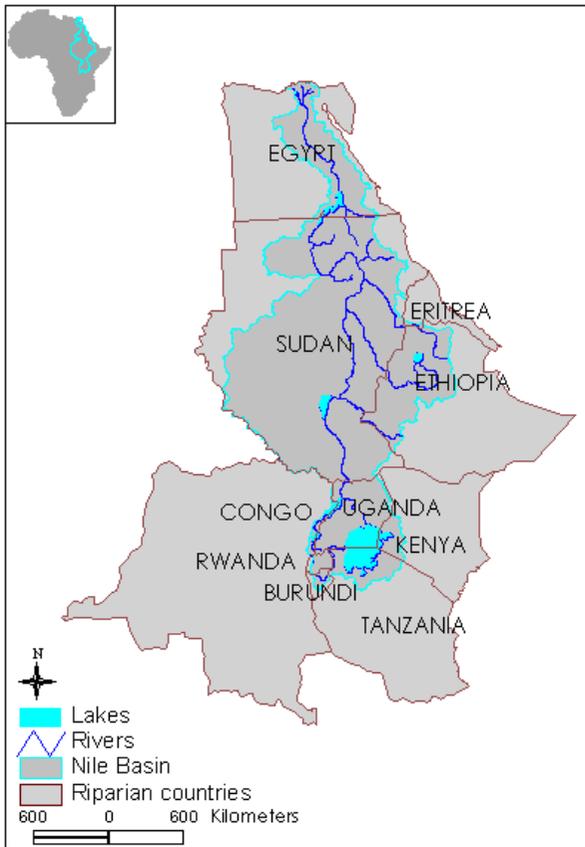
Challenges

Desertification and land degradation, water resources reduction, unsustainable exploitation of natural resources, poverty, migration, institutional capacity building, strengthening cooperation for management and development, stakeholder involvement and need for more funding.

References and Links

- i) NBA, Shared Vision for Sustainable Development of Niger River Basin, A Strategic and Participatory Approach, 2004.
- ii) NBA, Shared Vision for Sustainable Development of Niger River Basin, Phase 2 Presentation Document 2: Preparation of Sustainable development Action Plan (Draft, 20 Dec. 2004).
- iii) NBA/GEF, Inversion of the Soil and Water Degradation Tendencies in the Niger River Basin, Trans-Boundary Diagnosis, December 2002.
- iv) Various working papers of World Bank and AfDB.
- v) NEPAD, Short – Term Action Plan for Infrastructure, Main Report, 2002.
- vi) Burchi, Stefano and Melvin Spreij. 2003. Institutions for International Freshwater Management. Technical Documents in Hydrology No.3. UNESCO-IHP.

Nile River Basin



NILE BASIN

Name of Organization:

Nile Basin Initiative (NBI)

Administrative Address:

Nile Basin Initiative Secretariat,
P. O. Box 192, Entebbe, Uganda.

Telephone: 256-41-321424/321329/320971

E-Mail: nbisec@nilebasin.org

Head of Organization:

Mr. Audace Ndayizeye

Position: Executive Director

Contact Person/People:

Tom Waako Baguma

Position: Program Officer

Address:

Secretariat, Nile-Sec

E-Mail: twaako@nilebasin.org

Website: www. nilebasin.org

Year Launched: 1999

Basic Data

Total Area: 3.04 million km²; Lakes: 81, 500 km² ; Swamps: 70, 000 km²; the rest is land.

Length of River: 6,700 km

African River Basins

Total Population: 280 million in 2006; Expected to reach 591 million in 2025; Average Growth Rate: 2.5 – 3.0 % per year;

Population Density: 955/ 1,000 ha.

Total Rainfall: Mean Annual Rainfall over entire basin: 2,000 billion m³

Rain-Fed Agriculture: Major means of food production

Irrigated Agriculture: Over 5.5 million ha in Egypt and Sudan with potential to expand to 10.4 million ha. Planned expansion includes 387,000 ha in Uganda, Tanzania and Kenya and 265,000 ha in Ethiopia. The other Riparian Countries have no irrigation potential and depend on rain-fed agriculture.

Riparian Countries

| Area of Basin in Country | km ² | % |
|--------------------------------------------------|------------------|-------------|
| Burundi | 13,000 | 0.43 |
| Democratic Republic of Congo (Zaire at the time) | 21,700 | 0.71 |
| Egypt | 273,100 | 8.99 |
| Egypt-administered by Sudan | 4,400 | 0.14 |
| Eritrea | 3,500 | 0.12 |
| Ethiopia | 356,900 | 11.75 |
| Kenya | 50,900 | 1.68 |
| Rwanda | 20,800 | 0.69 |
| Sudan | 1,931,300 | 63.57 |
| Sudan- administered by Egypt | 2,000 | 0.07 |
| of Tanzania, United Republic | 120,300 | 3.96 |
| Uganda | 238,900 | 7.86 |
| Total | 3,036,800 | 100% |

Organizational Structure

The committee of ministers from the Riparian Countries (Nile-COM) is the highest decision-making body of NBI. This is supported by the Technical Advisory Committee (Nile-TAC) composed of two senior officials from each country. The secretariat (Nile-SEC) provides administrative, financial and logistical support and services to Nile-COM and Nile-TAC. Nile-SEC is responsible for the coordination of the Shared Vision Program (SVP) working groups and Subsidiary Action Programs (SAP). A long-term partnership

between riparian states and the international community is maintained by the International Consortium for Cooperation on the Nile (ICCON), a unique forum convened by the World Bank. ICCON ensures coordinated and transparent support for enhancing cooperative water resources development and management by implementing SVP and SAP projects in partnership with member states. This is supposed to contribute to strengthening the cooperation mechanism, long-term sustainable development, socio-economic growth and regional integration.

Organizational Structure for Cooperation

This includes the cooperative structure and organs for river/lake basin organizations, national state representation, the rules that govern their internal relations and their interaction with nation states/administration and their mandate and authority. Such structures include colonial agreements now regarded as colonial impositions that need reviewing and existing agreements most of which do not provide for any monitoring and enforcement mechanisms. Recent agreements focus more on cooperation in sharing the water resources and in promoting socio-economic development in the basin. International law on water, in dire need of a review, is poorly developed and only concerns itself with rights and responsibilities of states.

Nile River Basin

List of Treaties/Agreements

| Date | Treaty Basin | Signatories | Treaty Name |
|----------------|--------------|--------------------------------------------------------|----------------------------------|
| April 15, 1891 | Nile | Great Britain; Italy | Boundary Protocol |
| March 18, 1902 | Nile | Ethiopia; Great Britain | Exchange of Notes |
| May 5, 1902 | Nile | Ethiopia; Great Britain | Frontier Agreement |
| May 15, 1902 | Nile | Ethiopia; Great Britain | Frontier Agreement |
| May 9, 1906 | Nile | Congo; Great Britain | Sphere of Influence Agreement |
| Dec.. 13, 1906 | Nile | France; Great Britain; Italy | Abyssinia Agreement |
| Dec.. 20, 1925 | Lake Tana | Great Britain; Italy | Exchange of notes |
| May 7, 1929 | Nile | Egypt; Great Britain | Exchange of notes |
| Nov. 22, 1934 | Nile | Belgium; Great Britain | Water Rights Agreement |
| Dec.. 7, 1946 | Nile | Egypt; Great Britain; | Profits Utilization |
| May 31, 1949 | Nile | Egypt; Great Britain; Northern Ireland | Owen Falls Agreement |
| Sept. 29, 1949 | Nile | Ethiopia; Great Britain; Northern Ireland | Boundary Agreement |
| Dec.. 5, 1949 | Nile | Egypt; Great Britain on behalf of Uganda | Owen Falls Agreement |
| Jan. 19, 1950 | Nile | Egypt; Great Britain | Cooperation Agreement |
| April 8, 1950 | Nile | Belgium; France; Luxembourg | Tripartite Committee Protocol |
| July 16, 1952 | Nile | Egypt; Great Britain; Northern Ireland | Owen Falls Agreement |
| Nov. 8, 1959 | Nile | Sudan; United Arab Republic | Water Utilization Agreement |
| Jan. 17, 1960 | Nile | Sudan; United Arab Republic | Permanent Technical Committee |
| Aug. 24, 1977 | Kagera | Burundi; Rwanda Tanzania; Uganda | Kagera River Basin Agreement |
| May 18, 1981 | Kagera | Burundi; Rwanda | Uganda Accession |
| Jan. 1, 1993 | Nile | Egypt; Sudan; Rwanda; Tanzania; Uganda and Zaire | Establishment of TECCONILE |

African River Basins

| Date | Treaty Basin | Signatories | Treaty Name |
|--------------|---------------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| July 1, 1993 | Nile | Egypt; Ethiopia | Cooperation Framework Environmental Management Agreement Expansion of TECCONILE-NBI |
| Aug 5, 1994 | Lake Victoria | Kenya; Tanzania; Uganda | |
| Feb. 1999 | Nile | Burundi; DRC; Egypt; Ethiopia; Kenya; Rwanda; Sudan; Tanzania and Uganda | |

Geographical Scope

This includes the whole Nile Basin comprising of all sub-basins and watercourse systems contained therein.

Functions/Mandate

NBI is a multi-functional river basin organization whose main objectives are:

- Provision of a platform for co-operation and for building working relationships between the Riparian Countries
- Provision of an arrangement by which to move forward from discussion to action
- Implementation of the “Strategic Action Program”

Management Plans and Action Programs

The NBI plans to implement projects, in partnership with member states, that will contribute to strengthening the cooperation mechanism and to long-term sustainable development, economic growth and regional integration. This will be achieved through the implementation of two complementary sub-programs: The Shared Vision Program (SVP) and the Subsidiary Action Program (SAP). The SVP will contribute in the creation of an enabling environment for investments and action on the ground and will promote the shared vision through a set of effective basin-wide activities. The Shared Vision Projects will be Power Forum, Water Resources Management, Environment, Agriculture, Applied Training, Benefit Sharing and Communications with the Project Management Units in Tanzania, Ethiopia, Sudan, Kenya, Egypt, Uganda and the Nile-SEC HQ respectively. An initial set of seven basin-wide SVP projects has been endorsed by Nile-COM and their project documents prepared. They include: environmental action, power trade, efficient water use for agriculture, water resources planning and management, communications, applied training, and socio-economic development and benefit sharing. SAP plan and implement action on the ground at the lowest appropriate level. They will comprise actual development projects at sub-basin level, involving two or more countries in order to address the challenges of regional co-operation and development opportunities with transboundary implications. Two groups of countries have been formed to investigate the development of investment projects on the Nile Basin. These are the Eastern Nile Group (ENSAP), which includes Egypt, Sudan and Ethiopia; and the Nile Equatorial Lakes Group (NELSAP) comprising Uganda, Tanzania, Kenya, Rwanda, Burundi and the Democratic Republic of Congo.

Monitoring and Information Systems

Information is formally provided to the member states and other stakeholders through the secretariat and the organization website. Regular meetings of the committees, conferences and workshops at different levels result in new policy formulations and modifications of existing and planned measures that are made available to stakeholders by the secretariat and/or website.

Rules on Decision-Making and Procedure for Dispute Resolution

The Nile-COM in consultation with Nile-TAC is the sole decision-making organ. Disputes, if they occur, are referred to the COM and TAC committees who work out solutions mutually acceptable to the parties involved. In case such solutions do not work the aggrieved parties may be referred to international arbitrators in water conflict resolution and transboundary waters such as Potential Conflict to Cooperation Potential (PCCP).

Financing of NBI and Its Co-operative Structures

NBI is supported by contribution from the NBI countries themselves and through the generous support of several multilateral and bilateral donors. The funds so raised are managed through a World-Bank managed Nile Basin Trust Fund (NBTF). At the basin-wide level NBTF funds support the implementation of the projects within SVP, strengthening of NBI institutional capacity and facilitating the process of NBI dialogue and engagement. At the sub-basin level, NBTF funds support the preparation and implementation of investment projects, building capacity for regional coordination and preparation of joint projects and providing advisory services and support to sub-regional institutions.

Stakeholder Participation

Stakeholder participation into the NBI activities is ensured through the Nile Basin Discourse (NBD), a network of civil society organizations from the ten countries of the Nile basin. The network seeks positive influence over the development of projects and programs under NBI and other Nile-related programs. The overall objective of NBD is to promote sustainable and equitable development, poverty reduction, and cooperation between all stakeholders in the Nile Basin. NBD is continuously getting more engaged in NBI activities and in so doing bringing the voices of the voiceless into the heart of this key inter-governmental process.

Website: www.nilebasindiscourse.org

Historical Record of Co-operation

After successful implementation of the TEC-CONILE project, the Nile countries ministers in charge of water affairs agreed to expand the mandate of TECCONILE and therefore launched a new transitional institutional mechanism under the name Nile Basin Initiative (NBI), in February 1999. This is considered to be a transitional arrangement until a permanent legal framework is put in place. The NBI member states are Burundi, Democratic Republic of Congo, Egypt, Ethiopia, Kenya, Rwanda, Sudan, Tanzania and Uganda.

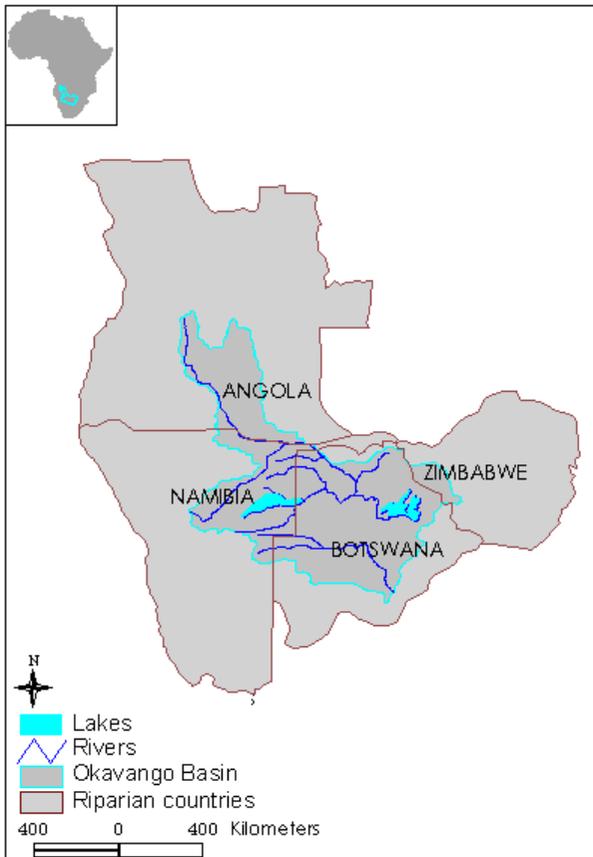
References and Links

Baker M. M., 1997: The Potential of the Nile River Basin and the Economic Development of Sudan, printed in American Almanac 1997. http://members.tripod.com/~american_almanac/sudan.htm#

FAO. Systematic Index of International Water Resources Treaties, Declarations, Acts and Cases, by Basin: Volume I. Legislative Study #15, 1978; #34, 1984.

FAO. 1997. Irrigation potential in Africa: A basin approach, FAO Land And Water Bulletin 4.

Okavango River Basin



OKAVANGO RIVER BASIN

Name of Organization: Permanent Okavango River Basin Water Commission (OKACOM)

Administrative Address:

Telephone: +257-390-3165 Ext. 109

Mobile: +267-7247-0326

E-Mail: okavcom_iss@irbm.co.bw

Head of Organization:

Position:

Contact Person/People:

Position:

Address:

E-Mail: okacom_iss@irbm.co.bw

Website: www.okacom.org

Fax: +267-390-3193

Year Launched: 1994

Basic Data

Total Area: 725,000 km²

Length of River: 1,100 km

Total Population: 800,000 inhabitants

Total Rainfall: Varies from 1300 mm/year in Angola to 300 mm/year and 400 mm/year in Namibia and Botswana respectively.

African River Basins

Rain-Fed Agriculture:

Irrigated Agriculture: The irrigation potential of this basin is estimated at 210,000 ha.

Other: Hydropower development in the lower catchment is limited by relatively flat terrain and sandy soils. Angola has high hydropower potential.

Organizational Structure for Cooperation

The agreement of 1994 facilitated the creation of the Permanent Okavango River Basin Water Commission (OKACOM) as a coordinating organization to act as a prime technical advisor to the three member states regarding the conservation, development, and use of water resources of mutual interest. OKACOM has neither a permanent secretariat nor a large staff complement. In its course of action, OKACOM established the Okavango River Steering Committee to implement the Trans-Boundary Diagnostic Analysis. The Committee has two technical members from each riparian state and has the mandate to advise the Commission on all technical matters. Under the umbrella of OKACOM, the member states are jointly working on a proposal to develop an integrated water resources management strategy. In this respect, OKACOM has to overcome major difficulties such as the absence of reliable basin-wide data and the conflicting national perspectives on resource needs.

Riparian Countries

| Country Area of Basin in Country | | |
|----------------------------------|-----------------|------------|
| | Km ² | % |
| Angola | 150,100 | 21.23 |
| Botswana | 358,200 | 50.65 |
| Namibia | 176,200 | 24.93 |
| Zimbabwe | 22,600 | 3.19 |
| Total | 708,400 | 100 |

Organizational Structure

The highest organ of OKACOM is the Inter-ministerial committee from member states and two technical members from each state. The Okavango River Steering Committee composed of two members from each state implements the transboundary integrated water resources management.

List of Treaties/Agreements

| Date | Treaty Basin | Signatories | Treaty Name |
|--------------|--------------|-----------------------------|------------------|
| Sep 16, 1994 | Okavango | Angola; Botswana Namibia | OKACOM Agreement |

Geographical Scope

This basin includes the Okavango River with its two tributaries of Cubango and Cuito.

Functions/Mandate

OKACOM advises its member states on measures and arrangements to determine the long-term safe yield of water available from all potential water resources in the Okavango River Basin and to anticipate demand; criteria to be adopted for the equitable allocation, conservation, and sustainable utilization of water resources in the basin; investigations, separately or jointly by the contracting parties, related to the development of any water resources in the basin, including the construction, operation and maintenance of any water works and prevention of pollution of water resources and control of aquatic weeds in the basin.

Management Plans and Action Programs

In order to develop an Integrated Basin Management Plan, the following activities were supposed to be undertaken:

- Trans-Boundary Diagnostic Assessment study to identify key areas of concern and gaps in knowledge of the physical and socio-economic system of the river basin;
- Strategic Action Program to structure inputs and resources prior to the implementation of a larger joint program of action;
- basin-wide Environmental Assessment with the participation of stakeholders including the establishment of channels of communication for effective coordination, consultation, and cooperation among the stakeholders.

Monitoring and Information

Systems

In order for OKACOM to fulfill its mandate, the Agreement stipulated that the signatory states supply the Commission with the required information. The signatory states were also required to notify the Commission and each other of any proposed development and before water regulating actions are undertaken.

Rules on Decision-Making and Procedure for Dispute Resolution

The Commission defines its own rules of procedure. Decision-making is based on negotiations among the concerned parties and is based on consensus. If no decisions can be made, the matter is referred to the member states for further negotiation. There are no formal sanctioning mechanisms for non-compliance of agreed upon rules and procedures. Any dispute concerning the interpretation or implementation of the OKACOM Agreement was to be settled by the member states.

Financing of OKACOM and Its Cooperative Structures

Each member state bears the costs of its own delegation. The member state hosting a meeting of OKACOM bears the meeting costs. Other costs or liabilities accepted by the Commission in the performance of its functions and the exercise of its power, shall be shared equally by the member states, unless otherwise agreed by the Commission. OKACOM has a small staff complement; it is not an expensive organization which relies on a small budget.

Stakeholder Participation

No specific provisions although intensive lobbying has taken place by the Okavango Liaison Group, a coalition of non-governmental organizations formed in 1996.

The International Rivers Network (IRN) has been actively involved in developing this coalition. International actors involved are the IUCN, World Wildlife Fund, Green Cross International and Green Peace.

Historical Record of Co-operation

Before the “Agreement on the Establishment of a Permanent Okavango River Basin Water Commission” was signed by the three riparian states in 1994, only bilateral agreements existed. In September 1990, the governments of Angola and Namibia agreed to endorse and affirm the old agreement on the Kunene River, signed between the colonial powers of Portugal and South Africa and to re-establish the Permanent Joint Technical Commission (PJTC). In November 1990, the governments of Namibia and Botswana signed a treaty to establish a Joint Permanent Technical Commission (JPTC). This commission has the same functions as OKACOM but operates separately. The JPTC covers the Chobe-Linyanti water system. Thus, this agreement did not include the three riparians into one coherent commission, partly because of the then ongoing Angolan civil war at that time. In 1991, the Namibian government started an initiative to involve all riparian states, which subsequently led to the establishment of the Permanent Okavango River Basin Water Commission (OKACOM) in 1994.

Challenges

Lack of basin-wide organizations for water resources management, inadequate political dialogue on IWRM, conflicting demands on limited water resources, lack of shared vision, unknown water demands in Angola, limited capacity for WRM, high variability of available water resources, lack of pertinent data and need for cooperation in WRM.

References and Links

Ashton, Peter. 2003. The search for an equitable basis for water sharing in the Okavango River Basin, in Mikiyasu Nakayama (ed.), *International Waters in Southern Africa*, United Nations University Press: Tokyo, New York, Paris, Water Resources Management and Policy, pp. 164-188.

Burchi, Stefano and Melvin Spreij. 2003. Institutions for International Freshwater Management, UNESCO / IHP / WWAP, IHP-VI, Technical Documents in Hydrology, PC->CP series No. 3, SC-2003/WS/41.

Pinheiro, Isidro, Gabaake Gabaake, and Piet Heyns. 2004. Cooperation in the Okavango river basin: The OKACOM perspective, pp. 105-118, in: Green Cross International, and University of Pretoria. 2004. Trans-Boundary rivers, sovereignty and development: Hydropolitical drivers in the Okavango River Basin, AWIRU, (<http://www.up.ac.za/academics/libarts/polsci/awiru/transboundaryrivers01.html>)

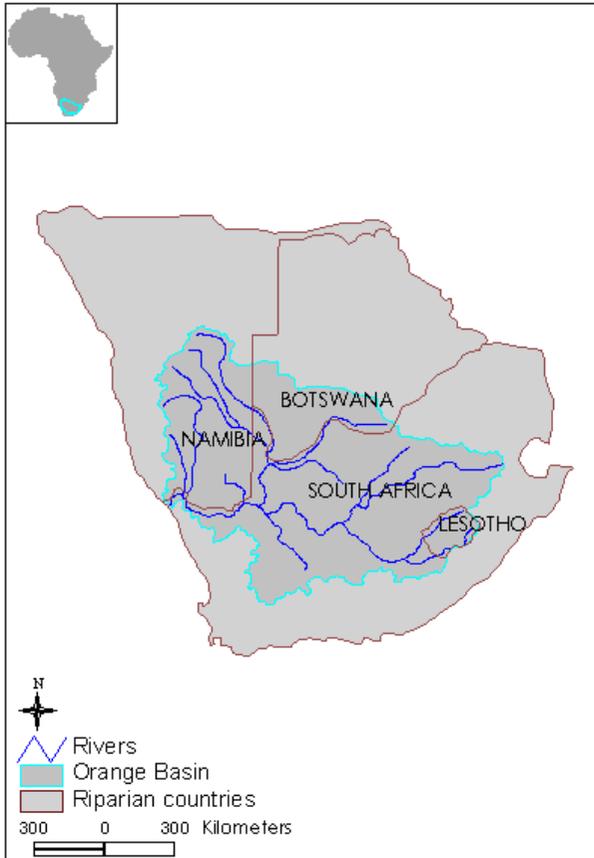
Turton, Anthony R. 2004. The hydropolitical dynamics of cooperation in Southern Africa: A strategic perspective on institutional development in international river basins, pp. 83-99, in: Green Cross International, and University of Pretoria. 2004. Trans-Boundary rivers, sovereignty and development: Hydropolitical drivers in the Okavango River Basin, AWIRU, (<http://www.up.ac.za/academics/libarts/polsci/awiru/transboundaryrivers01.html>)

Turton, Anthony R. 2004. Evolution of Water Management Institutions in Select Southern African International River Basins, in Asit K. Biswas, Olcay Ünver, and Cecilia Tortajada (eds.), *Water as a Focus for Regional Development*, Oxford University Press, Water Resources Management Series, pp. 251-289.

Turton, Anthony R., P. Brynard, and R. Meissner. 2002. Four Strategic Policy Issues for Consideration by the Permanent Okavango River Basin Water Commission (Okacom), 3rd WaterNet/Warfsa Symposium “Water Demand Management for Sustainable Development”, Dar es Salaam, 30-31 October. UNECA, United Nations Economic Commission for Africa. 2000. Trans-Boundary River/Lake Basin Water Development in Africa: Prospects, Problems, and Achievements, December, ECA/RCID/052/00, Addis Ababa, Ethiopia, pp. 43-44.

Wormuth, Matthias and Marc-Oliver Buffle. 2003. ETH Seminar on the Science and Politics of International Freshwater Management. The Okavango Case Study (www.eawag.ch/research_e/apec/seminars/Case%20studies/Okavango.pdf)

Orange River Basin



ORANGE RIVER BASIN

Name of Organization: Orange-Senque River Commission (ORASECOM)

Administrative Address:

Telephone:

E-Mail:

Head of Organization:

Position:

Contact Person/People: Mr. Boikanyo Mpho

Position: Interim Secretary

Address: ORASECOM Interm Secretariat
c/o GTZ Trans-Boundary Water Management
in SADC, 22 Khama Crescent

E-Mail:

Website:

Year Launched:

Basic Data

Total Area: 850,000 km²

Length of River: 2,300 km

Total Population: 14,100,000 inhabitants

Total Rainfall: Varies from 35 mm/year to 1000 mm/year with a mean value of 325 mm/year over the basin.

Rain-Fed Agriculture:

African River Basins

Irrigated Agriculture: The irrigation potential for the basin is estimated at 390,000 ha of which 303,000 ha are presently irrigated.

Riparian Countries

| Area of Basin in Country Km ² | % |
|---------------------------------------------|---------------------|
| Botswana | 121,400 12.85 |
| Lesotho | 19,900 2.10 |
| Namibia | 240,200 25.40 |
| South Africa | 563,900 59.65 |
| Total | 945,400 100% |

Organizational Structure

The Council is the highest body of ORASECOM supported by a task team of consultants and donors. A permanent secretariat is planned.

Organizational Structure For Cooperation

A Council, which is the highest body of the Commission, is supported by a Task Team made up of consultants, donors etc. The Council consists of the participating countries' delegations, each having three members. The Council meets at least once a year.

List of Treaties/Agreements

| Date | Treaty Basin | Signatories | Treaty Name |
|------------------------------|-----------------------|------------------------------------------------|------------------------------------------------------|
| Oct 24, 1986 | Senqu/Orange | Lesotho; South Africa | Lesotho Water Project Treaty |
| Nov 19, 1991 | Orange | Lesotho; South Africa | Protocol IV on Water Treaty |
| Aug 31, 1992 Sep 14, 1992 | Orange Frontier of | Lesotho; South Africa Namibia; South Africa | Ancillary Agreement Permanent water Commission |
| Jan 1, 1999 | Orange | Lesotho; South Africa | Protocol VI on Water treaty |
| Nov 3, 2000 | Orange, Senque | Botswana; Lesotho; Namibia; South Africa | Formation of ORASECOM Agreement |

Geographical Scope

The Orange-Senque river originates from Lesotho highlands and is joined by the Makhalleng, Caledon, Vaal and Fish rivers.

Functions/Mandate

ORASECOM through the Council serves as technical adviser to the Riparian Countries on the development, utilization, and conservation of the water resources of the basin. The Commission was mandated to develop a comprehensive perspective of the basin, study the present and planned future uses of the river system, and determine the requirements for flow monitoring and flood management. The main objective was the realization of the principle of equitable and reasonable utilization, as well as the principle of sustainable development with regard to the River System.

Management Plans And Action Programs

The Orange-Senqu basin has been selected as one of the target basins of the EU Water Initiative. (EUWI). It has presented a portfolio of projects to the EUWI relating to the harmonization of the legislation in the Riparian Countries, the study of trans-boundary aquifers, water demand management, a basin information system, capacity building, and stakeholder participation. The Commission is to undertake a joint assessment of all the resources of and uses in the basin with the aim of developing an integrated water resources management plan.

Monitoring and Information Systems

The Parties were required to exchange available information and data regarding the hydrological, hydro-geological, water quality, meteorological, and environmental conditions of the River System. A Party plan-

ning any project, program, or activity with regard to the River System which may have a significant adverse effect upon any one or more of the other Parties, or which may adversely affect such River System, must notify the Council and provide all available data and information with regard thereto.

Rules on Decision-Making and Procedure for Dispute Resolution

The Council shall make every effort to take decisions on the basis of consensus. No decision of the Council shall be valid unless taken at a meeting attended by at least three of the delegations. In the event of failure to reach agreement at such a meeting of the Council, the matter shall be made the subject of negotiations between the Parties. Any dispute between the Parties arising out of the interpretation or implementation of this Agreement shall be settled amicably through consultation and/or negotiation between them. In case of a dispute, decisions are transferred to the political level. If a dispute cannot be resolved, the case is referred to the SADC Tribunal whose decisions are final and binding.

Financing of ORASECOM and Its Cooperative Structures

ORASECOM is financed by the respective Ministries responsible for the management of water resources of the member states. Each member state covers the costs of its delegation. Meetings are financed by the hosting member state. All further costs or liabilities incurred by the Commission are equally covered by all member states.

Stakeholder Participation

The Council shall take all measures required to make recommendations, or to advise the Parties, on 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 harmonization of policies in that regard and the possible impact on the social, cultural, economic and natural environment.

Historical Record of Co-operation

In 1992, South Africa and Namibia established a Permanent Water Commission (PWC) to advise the governments on the development of the Lower Orange River. The PWC replaced the Joint Technical Committee, which was established in 1987. Namibia also entered into an agreement with South Africa on the establishment of a joint authority for an irrigation scheme that is linked with the PWC on the Lower Orange River. Lesotho and South Africa signed an agreement on the Lesotho Highlands Water Project (LHWP) in 1986, which eventually led to the establishment of the Lesotho Highlands

Water Commission (LHWC). After a long process of negotiations, the Orange-Senqu River Commission (ORASECOM) was established as the first multinational, multi-lateral institution dealing with the management of the transboundary water system.

Challenges

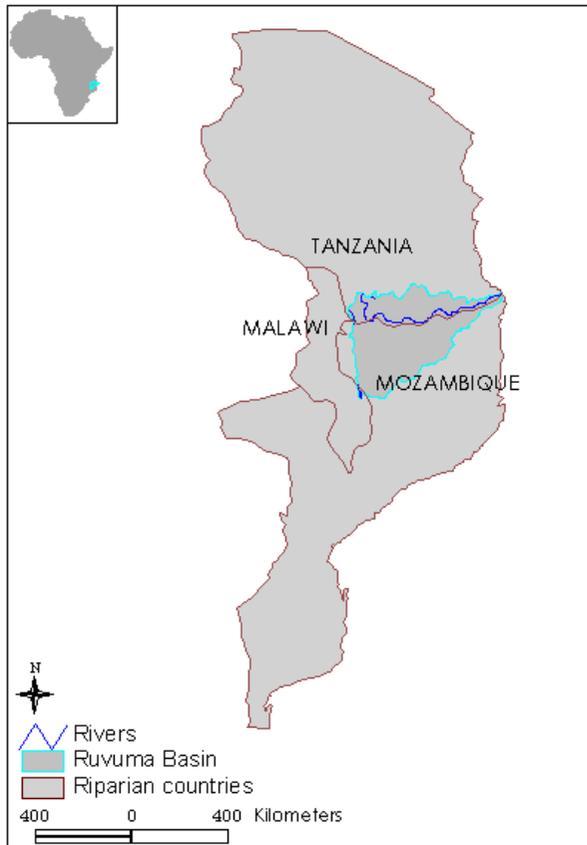
River being perennial but seasonal in nature, supporting a substantial part of South Africa's growing industrial development, rising demand for irrigation water, environmental impacts of abstraction, construction of infrastructure necessitated by high water demand and a secretariat in a difficult operationalization phase.

References and Links

Conley, A.H. and van Niekerk, P.H. 2000. Sustainable Management of International Waters: The Orange River Case. *Water Policy* 2 (2000): 131-149.

Wirkus, L. and Böge, V. 2005. Afrikas internationale Flüsse und Seen. Stand und Erfahrungen im grenzüberschreitenden Wassermanagement in Afrika an ausgewählten Beispielen. Gutachten im Rahmen des Forschungsprojektes „Grenzüberschreitendes Wassermanagement in Afrika“ des Bundesministeriums für wirtschaftliche Zusammenarbeit und Entwicklung. Erster Entwurf, Januar, Bonn.

Ruvuma River Basin



RUVUMA BASIN

Name of Organization:

Administrative Address:

Telephone:

E-Mail:

Head of Organization:

Position:

Contact Person/People:

Position:

Address:

E-Mail:

Website:

Year Launched:

Basic Data

Total Area: 151,700 km²

Length of River: 800 km

Total Population: 3,200,000 inhabitants

Total Rainfall:

Rain-Fed Agriculture:

Irrigated Agriculture:

African River Basins

Riparian Countries

| Area of Basin in Country | | |
|--------------------------|-----------------|-------------|
| | Km ² | % |
| Malawi | 400 | 0.30 |
| Mozambique | 99,000 | 65.27 |
| Tanzania | 52,200 | 34.43 |
| Total | 151,600 | 100% |

Organizational Structure Organizational Structure for Cooperation

List of Treaties/Agreements

| Date | Treaty Basin | Signatories | Treaty Name |
|---------------|----------------|-------------------------|------------------------------------------|
| Dec. 28, 1937 | Domani, Ruvuma | Great Britain; Portugal | Tanganyika-Mozambique Boundary Agreement |

Geographical Scope

Functions/Mandate

Management Plans and Action

Programs

Monitoring and Information

Systems

Rules on Decision-Making and

Procedure for Dispute Resolution

Financing of NBI and Its

Cooperative Structures

Stakeholder Participation

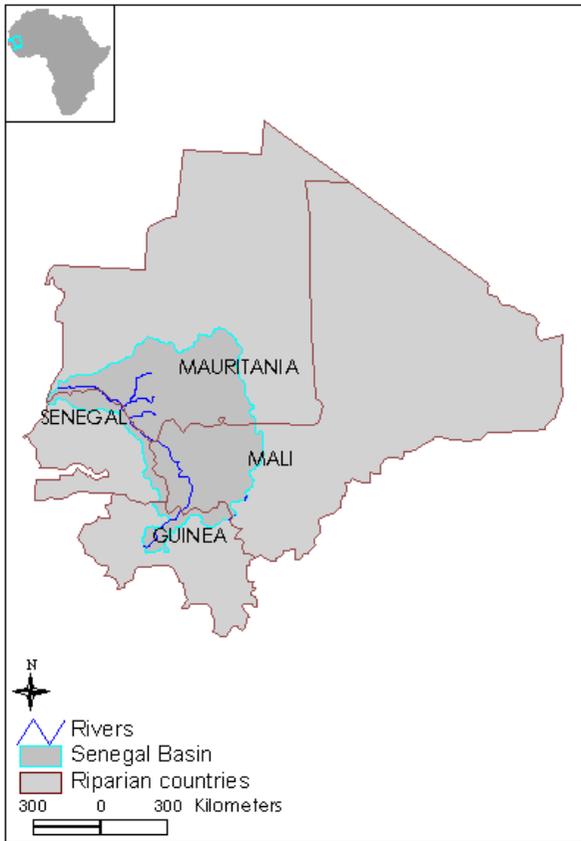
Historical Record of Co-operation

Challenges

Little data available, underdevelopment, lack of RBO and basin study.

References and Links

Senegal River Basin



SENEGAL RIVER BASIN

Name of Organization: Organization for the Development of Senegal river (OMVS)

Administrative Address: Haut Commissaire
46, Rue Carnot, BP:3152 , Dakar, Sénégal

Phone: (221) 823-45-30

Email: omvsphc@sentoo.sn

Head of Organization: M.Salem Ould Merzouk

Position: High Commissioner

Email: omvsphc@omvs.org

Contact Person: Adama Sanogo

Position: Secretary General

E-Mail: adama.sanogo@omvs.org

Website: www.omvs.org

Year Launched: 1972

Basic Data

Total Area: 490,000 km²

Length of River: 1,800 km

Total Population: 3,500,000 inhabitants

Total Rainfall: Varies from 55 mm/year in the valley and delta to 2,000 mm/year in the Upper basin in Guinea with an overall basin average of 550 mm/year.

African River Basins

Rain-Fed Agriculture: About 80,000 ha of various crops cultivated in the valley and delta.

Irrigated Agriculture: Rapidly increased after the construction of the Diama dam and is now the main development machine in the basin followed by fishing. The total irrigation potential is estimated at 420,000 ha of which only 118,000 ha are presently under irrigation.

Riparian Countries

| Area of Basin in Country Km ² | | % |
|------------------------------------------|----------------|-------------|
| Guinea | 30,800 | 7.07 |
| Mali | 150,800 | 34.59 |
| Mauritania | 219,100 | 50.25 |
| Senegal | 35,200 | 8.08 |
| Total | 435,900 | 100% |

Organizational Structure

The highest authority is the Conference of Heads of State and Government which determines the general policies of development and cooperation. The Council of Ministers is the legal representative of the OMVS and determines the general management policy of the river, the development of its resources and interstate cooperation and the financial contributions of the member states. It also approves the budget and Rules of Procedure of the High Commissioner. The Office of the High Commissioner is the executive organ of the OMVS and consists of four departments of Administration and Accounting, Foreign Relations, Technical Matters and the Regional Documentation Centre under a Secretariat.

Organizational Structure for Cooperation

The OMVS is a comprehensive organization with the goal of fostering economic development in the Senegal River basin through better international cooperation. In the 1972 Convention establishing the OMVS, the Senegal River and its tributaries were declared an "international river." Dams built under the convention were termed "common works" jointly owned by the three member states. The OMVS has established three consultative bodies: The Permanent Water Commission, the Advisory Committee, and the Regional Planning Committee. The Permanent Water Commission is the consultative body of the Council of Ministers and consists of representatives of the member states. Its main task is the definition of the water allocation among the member states and sectors, namely: industry, agriculture, and transport. The Advisory Committee is the consultative body of the OMVS and is composed of representatives from governments, financial institutions and the OMVS. The Regional Planning Committee advises the OMVS whether the available water resources can meet the regional development plans of the member states. The member states have established National Offices that are represented in the Advisory Committee of the OMVS. They assist the organization in implementing its projects and coordinating its activities in the member states.

Senegal River Basin

List of Treaties/Agreements

| Date | Treaty Basin | Signatories | Treaty Name |
|----------------|---------------|-----------------------------------|---------------------------------------------|
| Dec. 28, 1937 | Domani/Ruvuma | Great Britain; Portugal | Agreement on Tanganyika-Mozambique Boundary |
| July 26, 1963 | Senegal | Guinea; Mali; Mauritania; Senegal | Bamako Convention |
| Jan 30, 1970 | Senegal | Guinea; Mali; Mauritania; Senegal | Dakar Convention |
| March 11, 1972 | Senegal | Mali; Mauritania; Senegal | Nouakchatt Convention |
| Aug 11, 1972 | Senegal | Mali; Mauritania; Senegal | Convention Creating OMVS |
| Dec. 21, 1978 | Senegal | Mali; Mauritania; Senegal | Common Works Legal Statute Convention |

Geographical Scope

This covers the Senegal river and its main tributaries, the Bafing, Bakoye and Feleme rivers originating in the Fouta Djallon mountains in Guinea and the Karakoro and Gorgol rivers originating from Mauritania.

Functions/Mandate

The OMVS was founded to provide a secure and steadily improving livelihood for the inhabitants of the river basin and neighboring states. The mandate of the OMVS is very broad and ranges from policy-making, regulation to project implementation. Specifically, the OMVS is commissioned to determine the water allocation between the states and sectors, to define the general development policy for the Senegal River and its resources, and to plan and implement projects and monitoring.

Management Plans and Action Programs

Shortly after the founding of the OMVS a program was announced, centred on the construction of the Manantali Dam and another at the mouth of the River at Diamma. The program included three components, irrigation schemes, navigation of the river and energy generation with the construction of a hydropower station at the Manantali Dam. In 1997, the OMVS initiated the Environmental Impact Mitigation and Monitoring Program (PASIE) due to the negative environmental impacts that appeared after commencement of operation of the Diamma and Manantali Dams. PASIE consists of six programs: construction impact mitigation and monitoring, appropriation and right of way, optimal reservoir management, environmental sanitation, monitoring, coordination and communication,

and associated measures. In October 2003 the World Bank approved the implementation of the Senegal River Basin Water and Environmental Management Project funded by the GEF.

Monitoring and Information Systems

Any projects likely to modify the river regime, the state of its water, the biological feature of its fauna, and its conditions of navigability and of agricultural and industrial exploitation have to be approved by the member states. To this end, member states must be provided with timely information about any planned project concerning the development of the river.

Rules on Decision-Making and Procedure for Dispute Resolution

Decisions of the Conference of the Heads of State and Government and of the Council of Ministers are taken unanimously. They are binding upon all member states. If an agreement cannot be reached, the dispute must be submitted to the Commission of Mediation, Conciliation, and Arbitration of the Organization of African Unity.

Financing of OMVS and Its Cooperative Structures

All member states contribute equally to the budget of the OMVS, each covering one third of the budget of the High Commission. The costs and expenses of investment and operation of the common works are shared among the states in proportion to the benefits derived by each state.

Stakeholder Participation

There are no specific provisions stipulated in the agreement. However, within the framework of the PASIE project the possibility for stakeholder participation has been created with the Environmental Observatory. The Observatory is made up of a network of partner organizations including governmental and non-governmental organizations as well as suppliers and users of environmental information. The Observatory is expected to bring together all organizations that provide and collect environmental data, to produce a set of indicators for environmental change, to establish a central database, to support the collection and acquisition of new data, and to periodically publish environmental data.

Senegal River Basin

Historical record of Cooperation

The foundation for cooperation regarding the riparian states of the Senegal River was laid when the Inter-State Committee for Development of the Senegal River was established in 1963. It was the first agreement granting the Senegal River an “international status.” The Committee was succeeded by the Organization of the Senegal River Riparian States in 1968. The scope of the new organization was broader than that of its predecessor, aiming at the economic and political integration of the four member states. In 1972, the riparian states of the Senegal, with the exemption of Guinea, signed a new agreement establishing the OMVS.

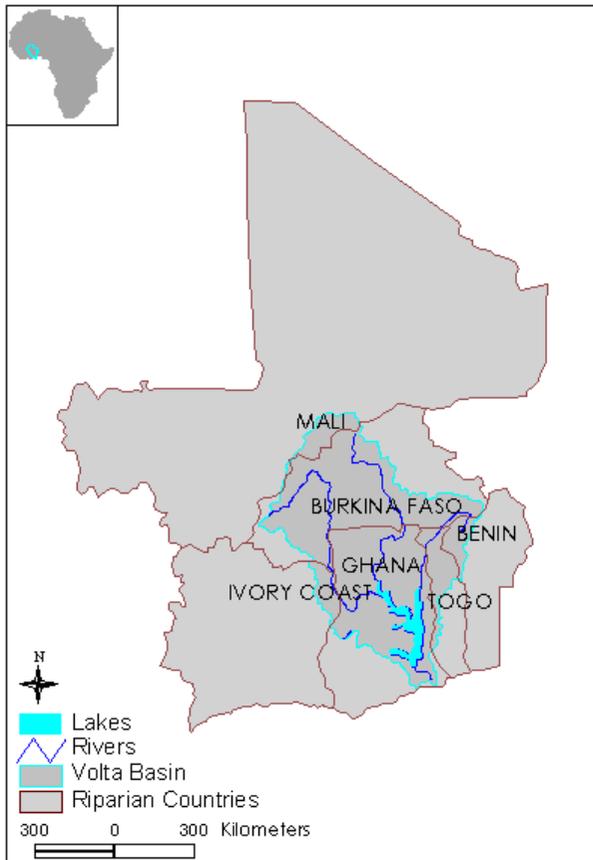
Challenges

Capacity limitation to manage complex water related issues, environmental (land and water) degradation, civil society participation, data and information management and need to strengthen cooperation for basin management and development.

References and Links

- i) UNEP, Atlas of International Freshwater Agreements, (2001).
- ii) OMVS, Introducing the Senegal River Development Organization, 2003.
- iii) World Bank, Senegal River Basin Water and Environmental Project, Project Appraisal Report, 2003.
- iv) NEPAD, Short – Term Action Plan for Infrastructure, Main Report, 2002.

African River Basins



VOLTA RIVER BASIN

Name of Organization: Volta Basin Initiative (VBI)

Administrative Address:

Telephone:

E-Mail:

Head of Organization:

Position:

Contact Person/People:

Position:

Address:

E-Mail:

Website:

Year Launched:

Basic Data

Total Area: 414,000 km²

Length of River: 1,610 km

Total Population: 14 million,

Growth rate: 2.9% per year.

Total Rainfall: Varies from 400 mm/year in the North to 1800 mm/year in the coastal zone.

Total Evaporation: Varies from 2500 mm/year

Volta River Basin

in the North to 1800 mm/year in the coastal zone.

Rain-Fed Agriculture: This, with some irrigated agriculture is the principal means of development for the people of the basin.

Irrigated Agriculture: The total irrigation potential spread over the six Riparian Countries is estimated at about 1.5 million ha.

Riparian Countries

| Area of Basin in Country | km ² | % |
|--------------------------|-----------------|-------------|
| Benin | 14,987 | 3.62 |
| Burkina Faso | 173,800 | 42.07 |
| Ghana | 165,600 | 40.21 |
| Ivory Coast | 13,413 | 3.24 |
| Mali | 18,920 | 4.57 |
| Togo | 25,875 | 6.25 |
| Total | 412,595 | 100% |

Organizational Structure

A Volta Basin Technical Committee (VBTC) has been proposed by experts from the six riparian states but has not yet been approved by the respective ministries. It is designed as a consultative body. So far, statutes and the organizational structure of the VBTC have been proposed to consist of one Ex-

pert Committee with two representatives, national focal points, and one additional expert. Coordination has been vested in the President, Vice President and a Secretariat.

Organizational Structure for Cooperation

The proposed Volta Basin Technical Committee (VBTC) is designed as a consultative body. So far, statutes and the organizational structure of the VBTC will comprise one Expert Committee with two representatives, national focal points, and one additional expert. Coordination of the committee was vested in the President and Vice President, and a Secretariat. The next steps are the VBTC formal endorsement by Water Resources Ministers and the Action Plan preparation by the Committee. A coordination and cooperation framework was supposed to have been established between the basin countries so as to guarantee sustainable management of water resources for the benefit of the basin population and the Green Cross project was supposed to facilitate the participation and awareness of civil society in riparian states in this process.

List of Treaties/Agreements

| Date | Treaty Basin | Signatories | Treaty Name |
|-----------|------------------------|-----------------------------------------------------------------------|-------------------------------------|
| July 1906 | Frontier/Shared Waters | France; Great Britain | Exchange of Notes on Sudan Boundary |
| 2004 | Volta | Gold Coast/French Benin; Burkina Faso; Ghana; Ivory Coast; Mali; Togo | VBTC Proposal |

Geographical Scope

This comprises the Volta river system made up of the Black Volta, Red Volta and White Volta all of which originate from Burkina Faso. The Volta river system is joined by a number of tributaries originating from Ghana.

Functions/Mandate

The main objective of the VBI is the promotion of public involvement in the establishment of joint management of the Volta basin water resources through the VBTC which is basically a consultative body. VBTC is expected to perform activities such as identifying issues and obstacles in the establishment of a Volta Basin body; collecting, pooling and exchanging all relevant information; advising national authorities; and directing partner support for the setting up of the basin body. More specific objectives seek to give a better understanding of the basin water resources and trans-border problems and establishment of a mechanism enabling proper decision-making to take into account aspirations and needs of basin civil society in the cooperation effort.

Management Plans and Action Programs

The planned programs so far include the Onchocerciasis Control Program in the Volta River Basin area involving the World Health Organization, Benin, Ghana, Ivory Coast, Mali, Niger, Togo, and Upper Volta, a regional program to combat desertification including the sustainable management of transbound-

ary water resources and the alternative energy supply program. Other sub-regional programs that were ear-marked include the West African Process on Integrated Water Resources Management of ECOWAS, Interstate Sub-regional Action Plan (PASR) and the West African Technical Advisory Committee (WATAC) of the Global Water Partnership (GWP). The Green Cross Water for Peace project was uniquely designed to ensure the full and active involvement of civil society representatives across the basin in the development of basin principles, agreements and management policies. VBI was supposed to coordinate meetings between experts, political leaders, international organizations involved in the Volta basin and representatives of civil society from across the basin to gather proposals on how best to manage the common basin water resources for the equitable benefit of all.

Monitoring and Information Systems

The organization had plans to create a permanent information sharing system for shared water resources for the assessment of availability, needs and risks through the Green Cross project. The Green Cross Project was supposed to be the architect of new and enhanced channels of communication between and among civil society representatives and riparian governments. It is the voice of the people.

Rules on Decision-Making and Procedure for Dispute Resolution

The prevention of conflicts, promotion of dialogue between the actors at the level of one or several countries are the principal objectives of the Green Cross project.

Financing of organization and Its Cooperative Structures

Funding of the organization relies heavily on international donors with local funds coming in a way of some contributions to specific projects and funds raised locally through ex royalties and user-polluter payments.

Stakeholder Participation

The Green Cross Peace Project ensures the involvement of civil society representative in basin activities.

Historical Record of Co-operation

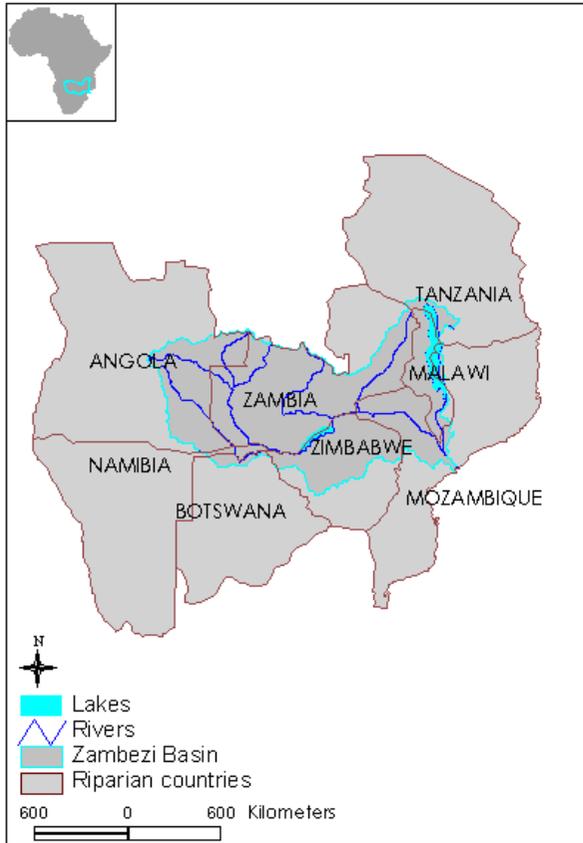
At the West African Conference on Integrated Water Resources Management, held in Ouagadougou in March 1998, the Ministers for Environment and Water Resources of West Africa called for the integrated management of water resources, both at national and regional level of shared river basins, to support social and economic development of the countries in the sub-region. To follow-up the recommendations of the Conference, the Ministers set up a Ministerial Committee with a Secretariat provided by the Government of Burkina Faso. At a meeting of the Ministerial Follow-up Committee held in Burkina Faso in March 2000, the Ministers for Environment and Water Resources approved a medium-term (2000-2004) Regional Action Plan for integrated water resources management. The Regional Action Plan included six programs that provide, among other things, sup-

port for developing regional coordination and creating or revitalizing collaborative frameworks between Riparian Countries for the management of shared basins. The ministers approved a project for creating a permanent structure for co-ordination and monitoring within the Economic Community of West African States (ECOWAS). In July 2004, an expert meeting of the six riparian states met in Ouagadougou, Burkina Faso, and resolved to establish a Volta Basin Technical Committee. The proposal awaits ministerial approval.

References and Links

Aboagye, Minta A. 2004. Towards the Establishment of the Volta Basin Organization (VBA), www.riob.org/transfrontalier/Dakar-2004/comms/Volta_Basin_Initiative.pdf. van Edig, Annette, Nick van de Giesen, Mark Andreini, and Wolfram Laube. 2001. Institutional and legal aspects of the Water Resources Commission in Ghana, in *Wasserkonflikte in der Dritten Welt*, Vol. 18, 2001. UNECA, United Nations Economic Commission for Africa. 2000. *Trans-Boundary River/Lake Basin Water Development in Africa: Prospects, Problems, and Achievements*, December, ECA/RCID/052/00, Addis Ababa, Ethiopia.

African River Basins



ZAMBEZI RIVER BASIN

Name of Organization: Zambezi Watercourse Commission (ZAMCOM)

Administrative Address: Secretariat, P. O. Box 30233 Lusaka, Zambia

Telephone: (260) 22084001/2 27970/3

E-Mail:

Head of Organization: Tumbare Mike

Position: Executive Secretary

Year Launched: 2004

Basic Data

Total Area: 1,570,000 km²

Length of River: 2,650 km

Total Population: Over 100 million with 38 million inhabitants living directly in the basin and a growth rate of 3%.

Total Rainfall: Annual rainfall in the basin varies from 1,800 mm/year in the north to 550 mm/year or less in the south of the basin.

Rain-Fed Agriculture:

Irrigated Agriculture: With a total irrigation potential of about 3.2 million ha only about 1.2 million ha are currently under irrigation.

Zambezi River Basin

Other: There exists significant hydropower potential with an installed capacity of 4,620 MW and about 40 more sites with a total capacity of 13,000 MW identified.

Riparian Countries

| Area of Basin in Country km ² | | % |
|---------------------------------------------|------------------|-------------|
| Angola | 252,600 | 18 |
| Botswana | 21,900 | 2 |
| Malawi | 112,100 | 8 |
| Mozambique | 168,000 | 12 |
| Namibia ¹ | 21,000 | 2 |
| Tanzania | 28,000 | 2 |
| Zambia | 574,000 | 41 |
| Zimbabwe | 224,000 | 16 |
| Total | 1,400,000 | 100% |

List of Treaties/Agreements

| Date | Treaty Basin | Signatories | Treaty Name |
|------------------------------|---------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------|
| Jun 11, 1891 | Busi, Limpopo, Pungwe, | Great Britain; | Spheres of Influence Treaty |
| Jan 21, 1953 | Sabi, Shire, Zambezi Zambezi | Portugal Great Britain; Portugal | Shire Valley Participation Treaty |
| Nov 18, 1954 Nov 25, 1963 | Kwando Kariba, Zambezi | Great Britain; Portugal Northern Rhodesia; Southern Rhodesia | Kwando River Agreement Power Corp Agreement |
| Apr 1, 1967 May 2, 1984 | Zambezi Zambezi | Portugal; South Africa Mozambique; Portugal; South Africa | Hydropower Agreement Cahora Bassa Project Agreement |
| May 28, 1987 | Zambezi | Botswana; Mozambique; Tanzania; Zambia; Zimbabwe | Action Plan |
| July 28, 1987 | Zambezi | Zambia; Zimbabwe | Zambezi River Utilization Agreement |
| July 13, 2004 | Zambezi | Angola; Botswana; Malawi; Mozambique; Namibia; Tanzania; Zambia; Zimbabwe | ZAMCOM Agreement |

Organizational Structure

ZAMCOM consists of the council of ministers, a Technical Committee and a Secretariat.

Organizational Structure for cooperation

The Zambezi Watercourse Commission, ZAMCOM, consists of the Council of Ministers, the Technical Committee, and the Secretariat. The Council is composed of one delegate from each member state. A Chairperson and Vice-Chairperson are elected on the basis of rotation. The Technical Committee is made up of three representatives from each member state and are primarily responsible for implementing the Council's decisions and developing the River Basin Management Strategy. The Secretariat is headed by an Executive Secretary and is responsible for the technical and administrative support of the Council.

Geographical Scope

The Zambezi water course system refers to both surface and groundwater resources of the Zambezi river. It is the largest shared watercourse system in Southern Africa.

Functions/Mandate

The objective of the Commission is to promote the equitable and reasonable utilization of the water resources of the Zambezi watercourse, and their efficient management and sustainable development. The ZAMCOM advises the member states on the planning, management, utilization, development, protection, and conservation of the Zambezi. The Commission also advises on measures necessary to avoid disputes between the member states and assists in the resolution of conflicts. ZAMCOM collects, evaluates, and disseminates information and data relevant to the implementation of the agreements and fosters greater awareness for the efficient and sustainable management and development of the Zambezi among the population. Furthermore, ZAMCOM aims at promoting, supporting, coordinating and harmonizing the management and development of the water resources and the national water policies.

Management Plans and Action Programs

ZAMCOM is currently working on the development of an Integrated Water Management Plan for the Zambezi River System, a project already initiated in the 1990s as part of the Action Plan for the Environmentally Sound Management of the Common Zambezi River System (ZACPLAN). ZAMCOM took over the responsibility from the bi-national Zambezi River Authority (ZRA).

Monitoring and Information Systems

All member states are obliged to inform ZAMCOM of any program, project or activity with regard to the Zambezi watercourse. If one of the other member states opposes planned measures or activities, they are required to start consultations and negotiations and reach a solution. The project is to be postponed during these negotiations. Furthermore, the Commission can conduct a fact-finding study to support the negotiation process.

Rules on Decision-Making and Procedure for Dispute Resolution

Decisions are taken unanimously, with two thirds of the member states forming a quorum. In case of a dispute the member states are required to enter into consultations and negotiations. The Council of Ministers may give recommendations. If a dispute cannot be settled, it can be referred to the SADC Tribunal. Disputes between a member state and ZAMCOM can also be brought before the Tribunal.

Financing of ZAMCOM and Its Cooperative Structures

All member states contribute equally to the budget of the Commission. Further details are to be elaborated by the Council.

Stakeholder participation

All member states shall ensure that all stakeholders who are likely to be affected by a program or project are informed of the activity and are provided with the opportunity to make comments. Furthermore, stakeholder involvement through a project steering committee and national steering committees was planned.

Historical Record of Co-operation

Plans to establish a river basin organization have existed since the 1980s, but no serious progress was made towards institutionalization of a basin-wide cooperation. In 1987, the governments of the Riparian Countries adopted the Action Plan for the Environmentally Sound Management of the Common *Zambezi River System* (ZACPLAN). Angola, Namibia, and Malawi joined these efforts in 1990. ZACPLAN consists of 19 projects, the so-called Zambezi Action Projects (ZACPRO). In 2002 the SADC Secretariat headed several rounds of negotiations until finally in July 2004 the Agreement establishing the Zambezi Watercourse Commission (ZAMCOM) was signed.

Challenges

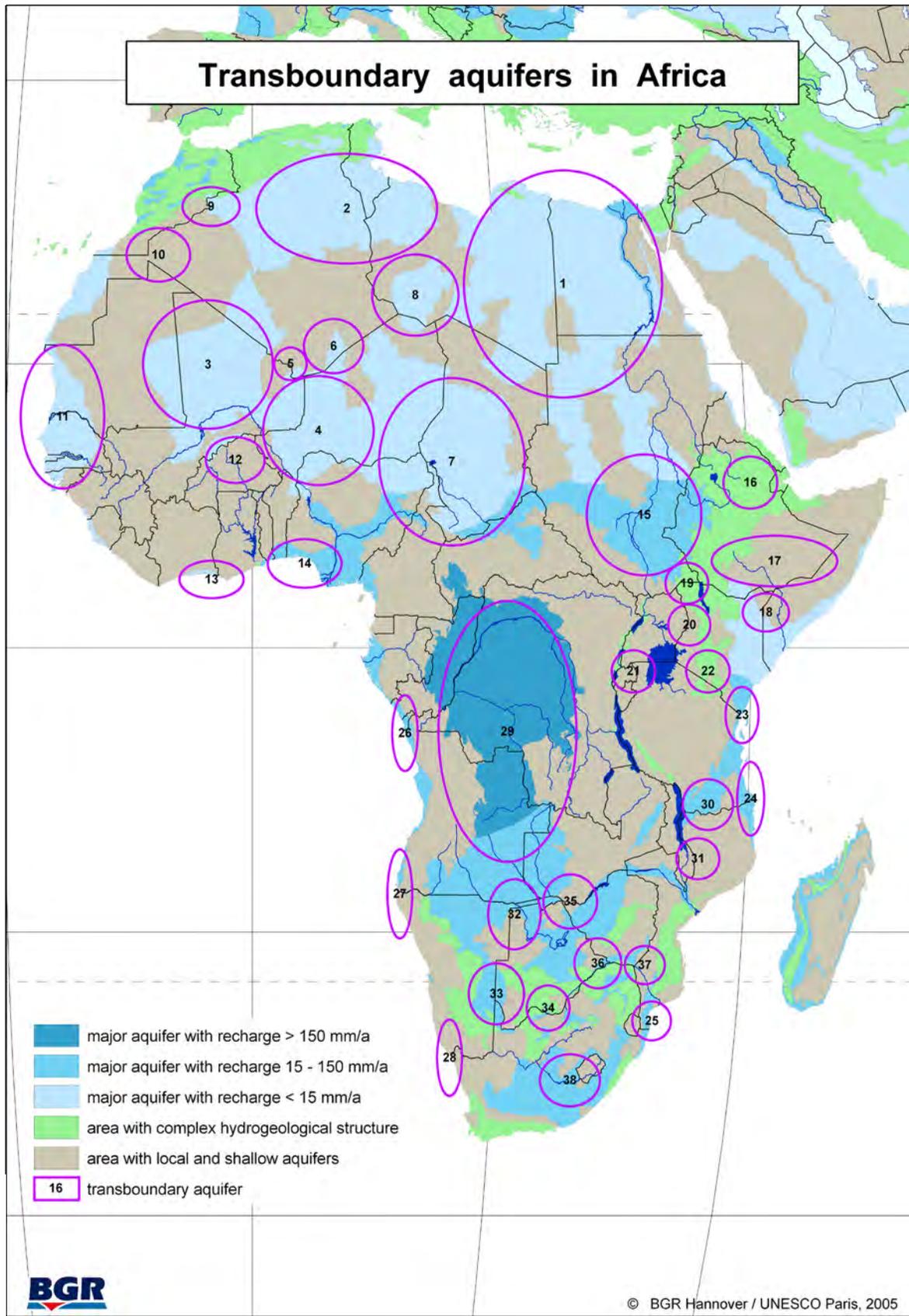
Very large underdeveloped basin, rampant poverty, hydropower/irrigation potential partially tapped, environmental impact assessment required, Zambia (41% of basin area) not a member of ZAMCOM, low stakeholder involvement and limited financial resources, lack of basin-wide organization for water resources management, inadequate political dialogue on IWRM, lack of common vision, inadequate funding and lack of cooperation mechanism.

References and Links

- Nakayama, M. 1997. Successes and Failures of International Organizations in Dealing with International Waters. *Water Resources Development* 13 (3): 367-382.
- Wirkus, L. and Böge, V. 2005. Afrikas internationale Flüsse und Seen. Stand und Erfahrungen im grenzüberschreitenden Wassermanagement in Afrika an ausgewählten Beispielen. Gutachten im Rahmen des Forschungsprojektes „Grenzüberschreitendes Wassermanagement in Afrika“ des Bundesministeriums für wirtschaftliche Zusammenarbeit und Entwicklung. Erster Entwurf, Januar, Bonn.
- Shela O.N. 2000. Management of shared river basins: the case of the Zambezi River. *Water Policy* 2 (2000): 65-81.
- Rangley, Robert, Bocar M. Thiam, Randolph A. Andersen, and Colin A. Lyle. 1994. International River Basin Organizations in Sub-Saharan Africa. World Bank Technical Paper No. 250, Africa Technical Department Series, World Bank, Washington, D.C.

African River Basins

Transboundary aquifers in Africa



Trans-Boundary Aquifers

| No. | Name of Aquifer System | Countries Underlain by Aquifer System |
|-----|-----------------------------------------|----------------------------------------------------------|
| 1 | Nubian Sandstone Aquifer System (NSAS) | Chad, Egypt, Libya, Sudan |
| 2 | Northwest Sahara Aquifer System (NWSAS) | Algeria, Libya, Tunisia |
| 3 | Taoudéni Basin | Algeria, Mali, Mauritania |
| 4 | Iullemeden Aquifer System (IAS) | Mali, Niger, Nigeria |
| 5 | l'Air Cristalline Aquifer | Algeria, Mali, Niger |
| 6 | Tin-Séririne Basin | Algeria, Niger |
| 7 | Chad Basin | Central African Republic, Chad, Cameroon, Niger, Nigeria |
| 8 | Mourzouk-Djado Basin | Chad, Libya, Niger |
| 9 | Errachidia Basin | Algeria, Morocco |
| 10 | Tindouf Aquifer | Algeria, Morocco |
| 11 | Senegalo-Mauritanian Basin | Gambia, Guinea-Bissau, Mauritania, Senegal |
| 12 | Liptako-Gourma Aquifer | Burkina Faso, Niger |
| 13 | Coastal Sedimentary Aquifer | Ghana, Ivory Coast |
| 14 | Coastal Sedimentary Aquifer | Benin, Nigeria, Togo |
| 15 | Upper Nile Basin | Ethiopia, Sudan |
| 16 | Awash Valley Aquifer | Djibouti, Ethiopia |
| 17 | Ogaden-Juba Aquifer | Ethiopia, Kenya, Somalia |
| 18 | Merti Aquifer | Kenya, Somalia |
| 19 | Rift Aquifers | Kenya, Tanzania, Uganda |
| 20 | Mount Elgon Aquifer | Kenya, Uganda |
| 21 | Kagera Aquifer | Tanzania, Uganda |
| 22 | Kilimanjaro Aquifer | Kenya, Tanzania |
| 23 | Coastal Sedimentary Basin | Kenya, Tanzania |
| 24 | Coastal Sedimentary Basin | Mozambique, Tanzania |
| 25 | Limpopo Basin | Mozambique, Swaziland |
| 26 | Coastal Sedimentary Basin | DR of Congo, Angola |
| 27 | Coastal Sedimentary Basin | Angola, Namibia |
| 28 | Coastal Sedimentary Basin | Namibia, South Africa |
| 29 | Congo Intra-cratonic Basin | DR of Congo, Angola |
| 30 | Karoo Sandstone Aquifer | Mozambique, Tanzania |
| 31 | Shire Valley Alluvial Aquifer | Malawi, Mozambique |
| 32 | Northern Kalahari/Karoo Basin | Angola, Botswana, Namibia, Zambia |
| 33 | SE Kalahari/Karoo Basin | Botswana, Namibia, South Africa |
| 34 | Ramotswa Dolomite Basin | Botswana, South Africa |
| 35 | Nata Karoo Sub-basin | Botswana, Namibia, Zimbabwe |
| 36 | Tuli Karoo Sub-basin | Botswana, South Africa, Zimbabwe |
| 37 | Medium Zambezi Aquifer | Botswana, Mozambique, South Africa, Zimbabwe |
| 38 | Karoo Sedimentary Aquifer | Lesotho, South Africa |

5.0 Problems Encountered in the Compilation of the Draft Sourcebook

Some of the problems encountered during data collection for the sourcebook included:

- Data on many small river basins was non-existent leading to blank fact sheets
- Reluctance of many river basin organizations to respond to the request for data presumably because they thought the data would only benefit the consultant.
- River basins that responded to the request did so not respond with specific data but submitting everything about the basin for the consultant to sort out and analyze which was very time-consuming.
- Limited e-mail communication capacity especially if it involves large data files.
- English-oriented key boards that do not facilitate correct expressions on the French key boards for communication with French River Basin organizations.

5.0 References:

The following sources have been very useful in the compilation of Data for this Sourcebook-Volume1 and worthy special mention.

- 1) UNECA (2000). Transboundary River/Lake Basin Water Development in Africa. Prospects, Problems and Achievements
- 2) UNESCO, Paris (2005). Transboundary Aquifers in Africa.
- 3) NEPAD (2005). NEPAD Short-Term Action Plan (STAP) for Transboundary Water Resources. Framework for Implementation.
- 4) EAC (2006). Lake Victoria Basin Commission (LVBC). "Information/data for a sourcebook."
- 5) GTZ (2006). River/Basin Organization data sheet.
- 6) SADC, Water Division (2006). Strengthening River Basin Organizations in SADC Region. Concept Note.



African River Basins