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IGAD REGIONAL WATER RESOURCES POLICY

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TABLE OF CONTENTS

ACRONYMS

ADB		African Development Bank
AMCOW		African Ministerial Council on Water
CBNRM		Community Based Natural Resources Management
COMESA		Common Market for Eastern and Southern Africa
EIA		Environmental Impact Assessment
GWP		Global Water Partnership
HoA		Horn of Africa
ICPAC		IGAD Climate Prediction and Applications Centre
IGAD		Intergovernmental Authority on Development
IGADD		Intergovernmental Authority on Drought and Development
INWRMP		Inland Water Resources Management Programme
IWRM		Integrated Water Resources Management
MDG		Millennium Development Goals
SADC		Southern Africa Development Community
SEA		Strategic Environmental Assessment
TAC		Technical Advisory Committee
UNFCCC		United Nations Framework Convention on Climate Change
WDM		Water Demand Management
WSCU		Water Sector Coordination Unit
WUA		Water User Association

EXECUTIVE SUMMARY

Background

The IGAD region covers an area of 5.2 million square kilometers and has a total population of more than 240 million people, spread in the countries of Djibouti, Eritrea, Ethiopia, Kenya, Somalia, South Sudan, Sudan and Uganda. With an average population growth rate of 3%, the region has one of the highest population growth rates in the world.

There are a number of international watercourses and transboundary aquifers in the IGAD region, including the Nile river basin, but over 60 percent of the region is arid or semi-arid and is prone to droughts that often lead to catastrophic famines and exacerbate competition for the limited water resources. Pastoralism or agro-pastoralism is the way of life for over 20 million people. Agriculture, crop farming and cash crops cover only 8% of the region's territory.

The IGAD Member States recognize the strong nexus between water reliability – or, in the worst-case scenario, scarcity – and conflicts. They recognize that central to the well-being of the population is access to reliable quantities of water of sound quality and predictable availability. Since much of the water resources of the region originate in well-watered areas and flow through increasingly arid areas crossing national administrative boundaries, a key element for transboundary water management in the region is sustainable resource development, use and management, backed by adequate policy and legal frameworks at the regional, basin/aquifer and national levels.

There is no overall policy and legal framework for water resources management in the region. Moreover, very few agreements, mostly outdated, relate to the development, use and management of shared water resources. Finally, water laws are in place in most of the IGAD Member States, but in many of them are outdated.

The IGAD Member States would greatly benefit from an overall regional policy and legal framework under which bi- and multilateral agreements for specific river basins and groundwater bodies would be developed. This regional policy framework would also be a driver for the approximation/harmonization of national laws, regulations and institutional arrangements, which would facilitate the implementation of the international agreements.

With this in mind, IGAD started the implementation of the Inland Water Resources Management Programme (INWRMP), with a component focusing on *the improvement of policy and legal frameworks*. This Regional Water Resources Policy is the outcome of work and consultations carried out within the framework of the INWRMP.

Vision

- A HORN OF AFRICA WHERE THERE IS AN EQUITABLE AND REASONABLE UTILIZATION AND SUSTAINABLE MANAGEMENT OF WATER RESOURCES FOR POVERTY ERADICATION, PEACE, SOCIOECONOMIC DEVELOPMENT, REGIONAL COOPERATION, ENVIRONMENTAL SUSTENANCE AND REALIZING WATER SECURITY BY 2025.

Objectives

The objective of the IGAD Regional Water Resources Policy is to promote closer cooperation in the equitable, sustainable and coordinated utilization, protection, conservation and management of

transboundary/shared water resources in the IGAD region for poverty eradication, socio-economic development, regional integration, environmental sustenance and peaceful coexistence.

Specific Policy objectives are:

- to promote and facilitate the establishment of legal and institutional arrangements for the management of transboundary/shared water resources among the members states in the IGAD region;
- to promote the approximation/harmonization of policies and legislation on the use, development, protection, conservation and management of transboundary/shared water resources, and of the resources related thereto;
- to promote research, use of modern technology, awareness creation and capacity building in the development and management of transboundary/shared water resources.

Purpose of RWRP

The IGAD Regional Water Resources Policy seeks to harmonize and consolidate existing water policies, and to address the existing gaps. Further, it aims at facilitating the integrated management of water, land and other natural resources so as to achieve its objectives. The Policy calls for coordination of all sectors of the economy on water resources management issues at all levels (regional, river basin or aquifer and national).

Guiding Principles

Water is a natural resource which is owned in common by all the peoples in the respective countries of the IGAD region. If utilized in a sound way and having regard not only to present needs, but also to the needs of future generations, it may be a vehicle for peace, cooperation and economic integration. Based on these considerations, the IGAD Member States have agreed on a Regional Water Resources Policy which is informed by the following guiding principles:

- Sustainable development and management of water resources.
- Consideration of the basin as unit for the integrated planning and management of water resources using an ecosystem approach.
- Equitable and reasonable utilization of water resources.
- Prevention of the causing of significant harm.
- Cooperation on the basis of sovereign equality, territorial integrity, mutual benefits and good faith in order to attain optimal utilization and adequate protection and conservation of transboundary/shared water resources.
- Exchange of readily available data and information on the conditions of transboundary/shared water resources.
- Exchange of information on planned measures on transboundary/shared water resources.
- Subsidiarity, that means planning and management of transboundary/shared water resources at the lowest appropriate level.[1]
- Participation of stakeholders at all levels in water resources development and management.
- Sharing of benefits and costs inherent to resource development and management.
- User and polluter-pays principle.
- Economic and social value of water.
- Peaceful resolution of disputes.

[1] This, however, entails that actions should be taken at the regional level by IGAD if it is agreed that the actions of individual member states are insufficient (IGAD 2007).

Policy statements

(a) Regional cooperation in water resources management

Water for economic integration

Member States shall ensure that their transboundary/shared water resources are developed and managed in an integrated manner, so as to facilitate the achievement of national and regional economic integration, socio-economic development, poverty eradication, water security, environmental sustenance and peaceful coexistence on the basis of equity and mutual benefits.

Water for peace

(i) Member States shall endeavour to negotiate a Regional Protocol on Water Resources to guide their cooperation in the management of transboundary/shared water resources.

(ii) Member States shall promote participation and cooperation in the planning, development, management, utilization and protection of their transboundary/shared water resources.

(iii) Member States shall endeavour to promote and exploit opportunities for joint development of their transboundary/shared water resources to consolidate regional cooperation.

Water and intersectoral cooperation

Member States shall ensure that all sectors involved in the development, utilization and management of water resources cooperate with a view to achieving regional economic integration, socio-economic development, poverty eradication, water security, environmental sustenance and peaceful coexistence.

Approximation/harmonization of national policies and legislation

(i) Member States shall take steps to approximate/harmonise their national water sector policies, plans, programmes and legislation, based on the Regional Water Resources Policy.

(ii) While developing their national water polices and legislation, Member States shall take into account the international and regional policies and legal instruments adopted by them and by IGAD.

Conflict management

Member States shall endeavour to resolve disputes concerning transboundary/shared water resources by peaceful means.

Water for international cooperation

IGAD shall actively participate in, and support, other African initiatives in line with the IGAD Regional Water Resources Policy, as well as create relationships with international initiatives on water resources management.

(b) Water for development and poverty eradication

Water for socio-economic development

(i) Member States shall consider that water has an economic value since it supports cross-sectoral regional economic integration and development, and that therefore it shall be conserved, developed and managed to provide economic benefits.

(ii) Member States shall consider water as a social good that is essential to human dignity, poverty reduction and, eventually, eradication, and social well-being.

(iii) Member States shall consider the concept of comparative advantage in water availability as a means of promoting regional trade, services and poverty reduction.

Water supply, sanitation and hygiene

(i) Member States have the social and economic responsibility to ensure sustainable access to safe water supply and sanitation within their national territories, to satisfy basic human needs.

(ii) Member States shall ensure that the use of water for the satisfaction of basic human needs enjoys priority over water use for other purposes in all river basin and aquifer management plans.

(iii) Member States shall seek to provide access to adequate sanitation facilities for rural, urban and peri-urban areas.

(iv) Member States shall ensure that provision of sanitation services is integrated into the provision of water supply for basic human needs.

(v) Member States shall ensure that rural water supply and sanitation facilities are managed by institutions at the appropriate level, including the local communities, with support by their respective governments.

(vi) Member States shall promote the integration of water supply and sanitation with hygiene education programmes.

(vii) Member States shall ensure that high priority is attached to water supply, sanitation and hygiene promotion in areas with a high incidence of HIV/AIDS.

Water for food security

(i) Member States shall ensure national and regional food security by developing those areas that have comparative advantage for rainfed and irrigated agriculture.

(ii) Member States shall ensure that water resources development for irrigation in commercial agriculture is planned in coordination with other sectors in the interest of IWRM.

(iii) Member States shall ensure reliable food production and enhance food security through the promotion of sustainable irrigated agriculture with suitable water and land resources.

(iv) Member States shall promote rainwater harvesting to make access to water for agriculture, livestock and the satisfaction of domestic needs more reliable.

(v) Member States shall promote affordable and sustainable techniques for small-scale irrigation as an equitable measure to increase production of food and cash crops in rural areas for sustainable livelihoods and poverty reduction.

(vi) Member States shall adopt measures to increase water use efficiency in agriculture. Pricing of irrigation water shall be consistent with the need to provide economic incentives for efficient use.

(vii) Member States shall ensure that water requirements for livestock receive adequate consideration at regional, national and local levels.

Water for energy development

(i) Member States shall promote the optimization of the energy development potential to provide the region with cheaper and more environmentally friendly sources of electrical energy.

(ii) Member States shall encourage the development of small-scale hydropower to meet the energy needs of rural communities.

Water for industrial development

Member States shall make water available for industrial use at the economic value of the resource.

Water for wildlife and national parks

Member States shall reserve water for wildlife and national parks.

Water for sports, tourism and recreation

Member States shall consider water for sports, tourism and recreation.

Water for navigation and transport

Member States shall consider water for navigation and transport.

(c) Protection and preservation

Water and the environment

(i) The management of a river (or lake) basin, or of an aquifer (or aquifer system), shall follow an ecosystem approach.

(ii) Member States shall take all appropriate measures to protect and conserve water resources and their ecosystems following a precautionary approach, according to their capabilities.

(iii) Before authorizing activities that are likely to exert an adverse impact on transboundary/shared water resources, or to have transboundary implications, Member States shall ensure that environmental impact assessments are undertaken.

(iv) Member States shall also undertake strategic social and environmental assessments, where feasible.

(v) Member States shall encourage the participation of stakeholders in social and environmental assessments.

(vi) Member States shall endeavour to reserve a basic minimum flow for the environment in all river basin and aquifer management plans.

(vii) Member States shall promote payment for ecosystem services as part of the protection and preservation of their transboundary/shared water resources.

Water quality management (water pollution control)

(i) Member States shall, individually or jointly, adopt the necessary measures to prevent and control pollution of their transboundary/shared water resources.

(ii) Member States shall harmonize surface water and groundwater quality standards and objectives for their transboundary/shared water resources.

Wetland management

Member States shall protect and conserve wetlands connected to their transboundary/shared water resources based on their needs and economic conditions.

(d) Security from water-related disasters

Protection from floods, droughts and other water-related disasters

Member States shall commit themselves to protect human life, livestock, property and the environment against the effects of floods, droughts and other water-related disasters.

Disaster management

(i) Member States shall cooperate in the prevention, management and mitigation of emergency situations resulting from floods, droughts and other natural and human-induced water-related disasters.

(ii) The IGAD Secretariat shall facilitate disaster prediction, management and mitigation.

(e) Water resources information management

Water resources monitoring and assessment

(i) Member States shall monitor the conditions of their transboundary/shared water resources and related resources, whether individually or jointly, on the basis of monitoring programmes agreed upon among them.

(ii) Member States shall monitor and assess transboundary/shared water resources and related resources within their respective jurisdictions in accordance with common or comparable procedures, within the framework of national programmes.

Data and information sharing

Member States shall cooperate, exchange data and information and consult each other on the conditions of their transboundary/shared water resources.

(f) Water and climate change

Monitoring climate change and variability

Member States shall incorporate climate change considerations into their water resources monitoring and assessment activities.

Mitigation and adaptation

Member States shall cooperate in the development of appropriate climate change mitigation and adaptation strategies and plans for their transboundary/shared water resources.

(g) Water resources development and management

River basin management

Member States shall pursue a river basin approach to the management of their transboundary/shared water resources.

Equitable and reasonable utilization

(i) Member States shall utilize their transboundary/shared water resources in an equitable and reasonable manner.
(ii) Member States shall, in utilizing their transboundary/shared water resources in their territories, take all appropriate measures to prevent the causing of significant harm to other Member States.
(iii) Member States shall ensure that the development and use of their transboundary/shared water resources will be regulated through appropriate functioning systems.

Groundwater management

(i) Member States shall make joint efforts to enhance the knowledge base with regard to their transboundary aquifers and aquifer systems.
(ii) Member States shall identify and protect vulnerable recharge areas and groundwater sources.
(iii) Member States shall promote artificial groundwater recharge.

Water resources planning

(i) Member States shall base the planning, development, protection and management of their transboundary/shared water resources on the IWRM principle, taking into account the cross-cutting nature of water and involving active water user and stakeholder participation.
(ii) Member States shall endeavour to plan their transboundary/shared water resources jointly.

Water demand management (WDM)

Member States shall promote WDM as a requirement for integrated planning and management of water resources, particularly transboundary/shared water resources.

Alternative sources of water

Member States shall promote alternative sources of water, such as rainwater harvesting, desalination, reuse of water and wastewater, and water recycling.

Dam development and management

(i) Member States shall promote, and agree on a framework for, the integrated planning, development and management of dams so as to ensure dam safety and optimize the use of transboundary/shared water resources, maximize the benefits deriving therefrom and take both positive and negative impacts into account for both upstream and downstream states.

(ii) Member States shall promote and facilitate the participation of stakeholders in decision making with regard to dam development and, where appropriate, with provision of support to vulnerable and marginalized communities to ensure their effective involvement in decision making, as well as the protection of their cultural heritage.

(h) Institutional framework

IGAD regional framework for water resources management

(i) An institutional framework shall be established at the regional level to facilitate the implementation of the Regional Water Resources Policy. This will include a Ministerial Committee on Water Resources, a Regional Technical Committee and a Water Sector Coordination Unit (WSCU) within the IGAD Secretariat.

(ii) The IGAD Secretariat shall coordinate the implementation of the Regional Water Resources Policy, promote capacity development, research and technology development, and facilitate the generation and sharing of data and information. The IGAD Secretariat shall support Member States in the negotiation of the Regional Water Resources Protocol.

Institutional arrangements for transboundary/shared water resources

(i) Member States shall endeavour to establish joint institutions to advise on, and coordinate, the sustainable development, equitable utilization and protection of their transboundary/shared water and related resources.

(ii) When Member States set up a joint institution for their transboundary/shared water resources, they shall make efforts to plan the use, development, protection and management of those resources through that institution.

(iii) Joint institutions for transboundary/shared water and related resources are formed following simple modalities and an evolutionary approach, suited to the specific conditions of the river basin or aquifer under consideration, and to those of the Member States.

(iv) Joint institutions shall regularly inform the IGAD WSCU of progress made in the implementation of this Policy within their respective river basins or aquifers.

Institutional arrangements at national levels

(i) The ministries responsible for water resources in the Member States shall coordinate the implementation of the Regional Water Resources Policy at the national level.

(ii) Member States shall take steps to decentralize water management functions to the lowest appropriate level, but shall establish appropriate linkage mechanisms to coordinate water management between different levels of administration.

Monitoring and evaluation

Progress in the implementation of the Regional Water Resources Policy shall be assessed through a coherent and transparent monitoring and evaluation system acceptable to the Member States.

(i) Stakeholder participation and capacity building

Stakeholder participation

(i) Member States shall promote the involvement of stakeholders in the development and management of transboundary/shared water resources at the appropriate levels.

(ii) Member States shall afford the communities potentially affected the opportunity to participate in the decisions, management measures or projects relating to transboundary/shared water resources.

Gender mainstreaming

(i) Member States shall ensure the involvement and participation of women, vulnerable groups, children and the elderly in the provision, management and safeguarding of water resources.

(ii) Member state institutions shall implement the principles, goals and objectives of gender mainstreaming in their water resources-related programmes.

Capacity building and awareness raising

(i) Member States shall promote capacity building at all levels, to ensure that decision makers, water managers and the water users and communities involved in water resources management in the IGAD region have the requisite knowledge and tools.

(ii) Water institutions in the region at all levels shall cooperate with a view to developing and sharing capacity to carry out their mandates in an effective and efficient manner.

(iii) Member States shall launch awareness-raising campaigns with a view to making water-related issues, policies and legislation known to stakeholders and the public at large.

(iv) Member States shall promote the incorporation of IWRM into water-related education curricula.

Research and development

(i) Member States shall cooperate in undertaking research and development with a view to attaining the objectives of the Regional Water Resources Policy.

(ii) Member States undertake to share technologies and information to improve the development, protection and management of transboundary/shared water resources in the region.

(j) Financing water resources development and management

Financial sustainability

(i) Member States shall ensure adequate financial resources for the development and management of their transboundary/shared water resources, and for the protection, preservation and restoration of these resources' ecosystems.

(ii) Member States shall promote appropriate financing mechanisms to ensure the sustainability of water resources development and management.

Public-Private Partnerships

(i) Member States shall develop partnerships with communities, civil society organisations and non-governmental organisations to support the development and management of water resources in the region.

(ii) Member States shall encourage partnerships between joint institutions or governments and the private sector where these could contribute to efficient management of resources, the delivery of services and lead to higher inflow of investment capital to the sector.

Implementation of Regional Water Resources Policy

The IGAD Regional Water Resources Policy will be implemented through a Regional Protocol on Water Resources which will set out the principles and rules underlying regional cooperation, in line with prevailing international water law. Among other things, the Protocol will provide the basis for the formulation of bilateral or multilateral agreements on specific transboundary/shared river basins or transboundary aquifers, and the setting up of institutional arrangements to facilitate cooperation. The development of the Protocol shall be initiated under the coordination of the IGAD Secretariat.

The implementation of the Policy and of the Protocol may require adjustments in the national policies, laws and regulations, and in the relevant institutional arrangements, so as to facilitate the implementation of joint measures to progressively meet the Policy's objectives.

Also to facilitate Policy implementation, institutional arrangements will be put in place, including the Ministerial Committee on Water Resources, the Regional Technical Committee and a Water Sector Coordination Unit (WSCU) within the IGAD Secretariat.

PART ONE – BACKGROUND AND POLICY CONTEXT

1 POLICY CONTEXT

1.1 Background

The IGAD region covers an area of 5.2 million square kilometers and has a total population of more than 240 million people, spread in the countries of Djibouti, Eritrea, Ethiopia, Kenya, Somalia, South Sudan, Sudan and Uganda. With an average population growth rate of 3%, the region has one of the highest population growth rates in the world.

Over 60 percent of the IGAD region is arid or semi-arid and is prone to droughts that often lead to catastrophic famines. Pastoralism or agro-pastoralism is the way of life for over 20 million people. Agriculture, crop farming and cash crops cover only 8% of its territory.

Central to the well-being of the populations of the IGAD region is access to reliable quantities of water of sound quality and predictable availability, so that unexpected and periodically serious water stresses can be mitigated. Since much of the water resources of the region originate in the well-watered south-western areas and flow through increasingly arid to hyper-arid areas crossing national administrative boundaries in their surface and subsurface flow paths, a key element for transboundary water management in the region is sustainable resource development, use and management. There are a number of international watercourses and transboundary aquifers in the region, and six out of eight of the IGAD Member States are riparian to the Nile.

Not many agreements relate to the development, use and management of shared water resources in the IGAD region, and most of the existing ones are outdated. As for the national policy and legal instruments in force, there are imbalances among the Member States. While Djibouti, Ethiopia, Kenya, Sudan, Uganda and, now, Eritrea have comprehensive water laws, South Sudan, a new country, is in the process of developing a new draft water act. Finally, in Somalia provisions relevant to water resources are scattered in numerous legal instruments which are outdated and do not meet current requirements. There is no overall policy and legal framework for water resources management in the region.

There is a strong nexus between water reliability – or, in the worst-case scenario, scarcity – and conflicts in the IGAD region. Among others, cross-border conflicts over water and related natural resources between pastoralists in the so-called Karamoja Cluster, which lies in Ethiopia, Kenya, South Sudan and Uganda, are embedded in the specific ecological conditions of the area and in the absence of adequate legal and institutional mechanisms for the management of these resources (Fahrenhorst 2012).

Overall water scarcity is exacerbated by the lack of understanding of groundwater in the Horn of Africa (HoA). Most groundwater-related data are incomplete, fragmented or outdated, and most scientists in the area lack the tools to assess groundwater availability to rapidly improve water supplies (UNESCO 2012).

The IGAD Member States would greatly benefit from an overall regional policy and legal framework under which bi- and multilateral agreements for specific river basins (other than the Nile river basin) and groundwater bodies would be developed. This regional framework would also be a driver for the approximation/harmonization of national laws, regulations and institutional arrangements, which would facilitate the implementation of the international agreements.

With this in mind, IGAD started the implementation of the Inland Water Resources Management Programme (INWRMP), with a component focusing on *the improvement of policy and legal frameworks*. This Regional Water Resources Policy is the outcome of work and consultations carried out within the framework of the INWRMP.

1.2 IGAD and water resources

IGAD was established in 1986 as the Intergovernmental Authority on Drought and Development (IGADD) to coordinate the efforts of the Member States in combating desertification and promoting efforts to mitigate the effects of drought. At an extraordinary Summit held at Addis Ababa, Ethiopia, on 18th April 1995, the Heads of State and Government resolved to revitalize the Authority and to expand its mandate to assist Member States to achieve food security and environmental protection, promote and maintain peace, security and humanitarian affairs and facilitate economic cooperation and integration. The Authority was thus renamed 'Intergovernmental Authority on Development' (IGAD) in 1996 and the Agreement establishing IGAD was amended accordingly (IGAD 2007). The new Agreement[2] gave IGAD an expanded mandate that includes *inter alia*, the following areas of cooperation among Member States:

- enhancing cooperation and coordinating their macro-economic policies;
- promoting sustainable agriculture development and food security;
- conserving, protecting and improving the quality of the environment;
- ensuring the prudent and rational utilization of natural resources;
- cooperating in increased sustainable utilization and development of energy resources in the region, and in the gradual harmonization of their national energy policies and energy development plans; and
- cooperating in the gradual harmonization of their national policies in scientific and technological research and development, transfer of technology, and their policies on capacity building in science and technology in the region.

While the new Agreement establishing IGAD identified some twenty areas of cooperation among the Member States, the following three priority areas were selected as the immediate entry points for cooperation:

- food security and environmental protection;
- conflict prevention, management and resolution; and
- economic cooperation and integration.

The IGAD region has experienced conflicts ranging from intra-state and inter-state conflicts to cross-border community conflicts. As a response, IGAD has developed strategies aimed at conflict prevention, management and resolution, to be implemented in partnership with the Member States. These strategies have placed emphasis on the need to establish mechanisms for addressing conflicts in various areas, including water resources.

In 2003, IGAD developed a Strategy and Implementation Plan 2004-2008, the objective of which was to actively promote regional economic cooperation and integration through enhanced capacity of the Member States for achieving regional food security while protecting the environment, peace building,

[2] Agreement Establishing the Inter-Governmental Authority on Development (IGAD), done at Nairobi on 21 March, 1996. The mandate of IGAD, as spelled out in the Agreement, includes policy harmonization (Art. 7 b) and a duty of member states to cooperate in specified areas, such as the sustainable management and utilization of shared natural resources (Art. 13A).

disaster risk management and regional economic cooperation and integration. A sectoral strategy for food security was completed in 2005 and thereafter, in 2007, an Environment and Natural Resources Strategy was developed. IGAD Member States recognize that the peaceful and cooperative utilisation of the region's water resources is an essential requirement for peace and stability, as well as for poverty reduction and accelerated economic growth.

To date IGAD is the key institution in the region having a mandate that covers issues relating to transboundary water resources and climate change. Its Peace and Security Strategy, which was approved by the IGAD Council of Ministers in July 2012, fully acknowledges the current and potential conflicts on transboundary water resources. Based on the Environment and Natural Resources Strategy, and on this Strategy, IGAD has started the implementation of a regional programme – the Inland Water Resources Management Programme (INWRMP) - which is assisting the Member States in the establishment of a regional Water Dialogue Forum, the strengthening of the policy and legal frameworks for water resources management, capacity building and the enhancement of water resources information systems.

1.3 Vision

During the first meeting of the IGAD INWRMP Technical Advisory Committee (TAC) in December, 2012, it was observed, among other, that a Water Vision for the IGAD region may well be derived from the Africa Water Vision 2025, with some adjustments to reflect the specific IGAD regional context. As a result, the following statement was formulated:

> ***A HORN OF AFRICA WHERE THERE IS AN EQUITABLE AND REASONABLE UTILIZATION AND SUSTAINABLE MANAGEMENT OF WATER RESOURCES FOR POVERTY ERADICATION, PEACE, SOCIOECONOMIC DEVELOPMENT, REGIONAL COOPERATION, ENVIRONMENTAL SUSTENANCE AND REALIZING WATER SECURITY BY 2025.***[3]

Drivers behind the proposed Vision were identified as follows:

- droughts and floods are increasing due to climate variability and climate change;
- the need to eradicate poverty;
- the need to meet ever-increasing water demands for various purposes of use as a result of population growth and development;
- the lack of institutional capacity to manage water resources in the region.

It is important to realize water security, eradicate poverty and achieve environmental sustenance.

[3] An alternative proposal for a Vision statement was: 'By *2025, to have a water-secure Horn of Africa where there is an equitable and sustainable use and management of water resources for poverty eradication, socio-economic development, regional cooperation and environmental sustenance.'*

1.4 Policy objectives

The objective of the IGAD Regional Water Resources Policy is to promote closer cooperation in the equitable, sustainable and coordinated utilization, protection and management of transboundary/shared water resources in the IGAD region for poverty eradication[4], socio-economic development, regional integration, environmental sustenance and peaceful coexistence.

Specific Policy objectives are:

(a) to promote and facilitate the establishment of legal and institutional arrangements for the management of transboundary/shared water resources among the members states in the IGAD region;
(b) to promote the approximation/harmonization of policies and legislation on the use, development, protection, conservation and management of transboundary/shared water resources, and of the resources related thereto;
(c) to promote research, use of modern technology, awareness creation and capacity building in the development and management of transboundary/shared water resources.

1.5 Scope of policy

The IGAD Regional Water Resources Policy applies to the use, development, protection, conservation and management of transboundary/shared water resources within the IGAD region, including river and lake basins, aquifers and aquifer systems.

1.6 Guiding principles

Water is a natural resource which is owned in common by all the peoples in the respective countries of the IGAD region. If utilized in a sound way and having regard not only to present needs, but also to the needs of future generations, it may be a vehicle for peace, cooperation and economic integration. Based on these considerations, the IGAD Member States have agreed on a Regional Water Resources Policy which is informed by the following guiding principles:

- Sustainable development and management of water resources.
- Consideration of the basin as unit for the integrated planning and management of water resources using an ecosystem approach.
- Equitable and reasonable utilization of water resources.
- Prevention of the causing of significant harm.
- Cooperation on the basis of sovereign equality, territorial integrity, mutual benefits and good faith in order to attain optimal utilization and adequate protection and conservation of transboundary/shared water resources.
- Exchange of readily available data and information on the conditions of transboundary/shared water resources.
- Exchange of information on planned measures on transboundary/shared water resources.

[4] Principle 5 of the Rio Declaration (1992) calls for state cooperation as an essential means to *eradicate* (not alleviate) poverty, since this is 'an indispensable requirement for sustainable development...'

- Subsidiarity, that means planning and management of transboundary/shared water resources at the lowest appropriate level.[5]
- Participation of stakeholders at all levels in water resources development and management.
- Sharing of benefits and costs inherent to resource development and management.
- User and polluter-pays principle.
- Economic and social value of water.
- Peaceful resolution of disputes.

The principles listed above are based on:

(i) existing IGAD policy and strategy documents, in so far as they deal with transboundary/shared water resources;
(ii) existing national policy documents of the IGAD Member States, since most principles underlying the Regional Water Resources Policy are recognized by all the states;
(iii) the principles enshrined in the Agreement on the Nile Basin Cooperative Framework (2010), although it is not yet in force, since this legal instrument is the result of ample and constructive debates among the majority of the IGAD Member States; and
(iv) the Africa Water Vision 2025, which indicates the way forward, and in particular its messages.

Additional instruments informing the principles set out in this Policy include

(i) the Dublin Statement on Water and Sustainable Development (1992) and the principles for integrated water resources management (IWRM) contained therein, which are considered as representative of best water resources management practices,
(ii) the SADC Regional Water Policy (2005), since the SADC is a regional economic integration organization which has expanded its mandate to cover water resources, just like IGAD has done with natural resources. The SADC Regional Water Policy is based on consolidated consensus among SADC Member States, which is reflected in the Revised SADC Protocol (2000). The Protocol is based on prevailing international law and consistent state practice, and
(iii) the draft East African Community (EAC) Water Vision 2025, which was published in October 2012.

2. WATER RESOURCES MANAGEMENT CHALLENGES AND OPPORTUNITIES

2.1 Water resources in the IGAD region

The fresh water resources of the IGAD region include surface water, groundwater, open water bodies and wetlands. This region drains in substantial part in the Nile River and Lake Victoria basins, the whole of the Lake Turkana basin and well-known deltas and swamps such as the Sudd in South Sudan, classified as a Ramsar[6] wetland. The lakes have rich fish stocks and have floodplains and wetlands that support diverse

[5] This, however, entails that actions should be taken at the regional level by IGAD if it is agreed that the actions of individual member states are insufficient (IGAD 2007).

[6] The Convention on Wetlands of International Importance, especially as Waterfowl Habitat (Ramsar, Iran, 1971) embodies the commitment of its member countries to maintain the ecological character of their wetlands of international importance and to plan for the 'wise use', or sustainable use, of all of the wetlands in their territories.

ecosystems. For example, Lake Victoria contains 183 fish species. However it is considered that prior to the introduction of the Nile perch and tilapias, there were at least 500 endemic haplochromine cichlid species in the lake (Lake Victoria Basin Commission 2011).

The IGAD region is home to the longest river in the world, the Nile River, which starts a 6,500 km journey from Lake Victoria to end in a large delta in Egypt before reaching the Mediterranean Sea. This river is of high economic and cultural importance in the region. The White Nile and the Blue Nile are the two main tributaries of the Nile River. The Blue Nile River originates at Lake Tana in Ethiopia, while the White Nile collects the waters flowing from Lake Victoria and the Sobat river (South Sudan).

The total renewable freshwater resources are estimated to be over 291 km3/year. This ranges from Eritrea with 6 km3/year to Ethiopia, which has 123 km3/year (WRI 2005), of which 97 % flow into rivers draining into South Sudan, Somalia, Kenya and Egypt (Abede 2003). Freshwater resources are unevenly distributed across the region and this makes the water situation quite precarious.

By 1995, only 7 % of the population in the IGAD region was living under conditions of water stress, and this is projected to increase over time (Gardner-Outlaw & Engelman 1997). These are extremely dire projections for a region that is so dependent on rainfed agriculture. It is projected that by 2025 21 % of the IGAD population will be in water stressed and 62 % in water scarcity conditions.[7]

The two main regional hydrological systems are the Ethiopian Highlands and the Lake Victoria basin, both of which contribute to the Nile basin. 12.5% of Uganda is classified as wetland (Mafabi 2000), though the Sudd of South Sudan, through which the Bahr El Jabel river flows, is larger in terms of actual area (2,700,000 ha).[8] With respect to the entire African continent, Eastern Africa is estimated to have about a third of all the wetland areas (Awimbo et.al 2004). Within the IGAD region, 77 % of the wetlands are found in Sudan and South Sudan, 10 % in Uganda, and 13 % in the remaining countries (Awimbo et.al 2004). These water systems not only provide the water life line for many millions of people, but the lakes, rivers and associated wetlands are very important from the perspective of biodiversity and as a livelihood source for fishers, farmers and pastoralists. However, the extent of wetlands is dynamic and every year hundreds of hectares of wetlands are modified or converted to other land uses. For example in the Jinja district, Uganda, 43.2 % of the wetlands or 76 km2 have been modified within a period of 15 years (NEMA 2002).

Rainfall is the primary source of the region's freshwater and is characterized by an important spatial and temporal variability. This is due, in part, to the existence of large inland lakes such as Lake Victoria, the Indian Ocean in the East and the seasonal migration of the Inter Tropical Convergence Zone. Annual rainfall ranges from less than 100 mm[9] in the drier areas in Somalia and northern Sudan to 2,700 mm[10] in the Ethiopian Highlands. Ethiopia's rainfall is characterized by the highest spatial and temporal variability in the IGAD region. Its south-western highlands receive annual rainfall of 2,700 mm, while the north-eastern lowlands receive only 100 mm annually (EPA 2003). On the other hand, the temporal variability of Ethiopian rainfall at intra-annual scale ranges from 100-2,400 mm (FAO AQUASTAT 2003). The intra-annual rainfall variations impact on the reliability of the water resources, resulting in frequent periods of water scarcity/drought or floods.

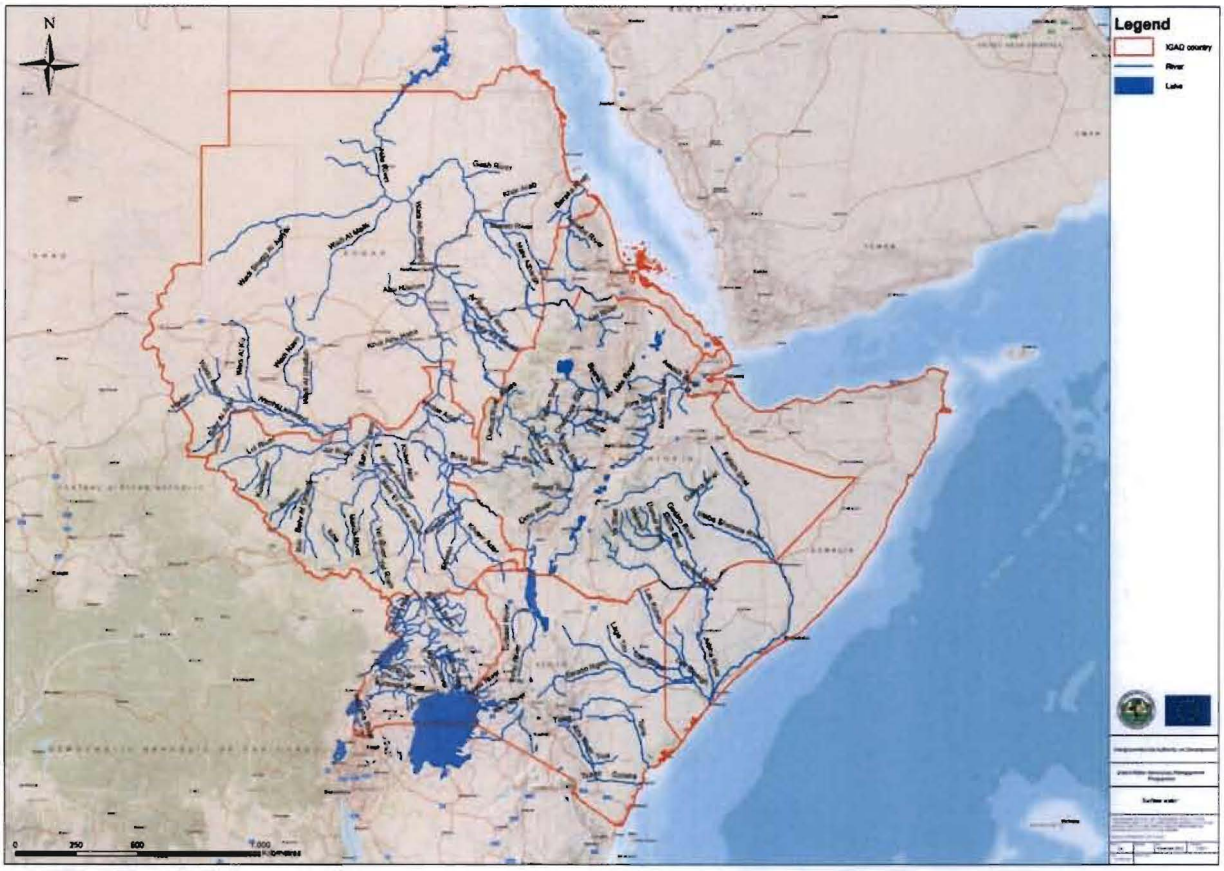
[7] According to the Falkenmark Water Stress Indicator, a country or a region is said to experience 'water stress' when annual water supplies drop below 1,700 m3/yr. This means almost all parts of the Horn of Africa region can generally be termed as water-stress region or facing water insecurity

[8] Ramsar site list.

[9] FAO SWALIM.

[10] USDA 1995.

Fig. 1 : Main transboundary/shared river basins in the IGAD region



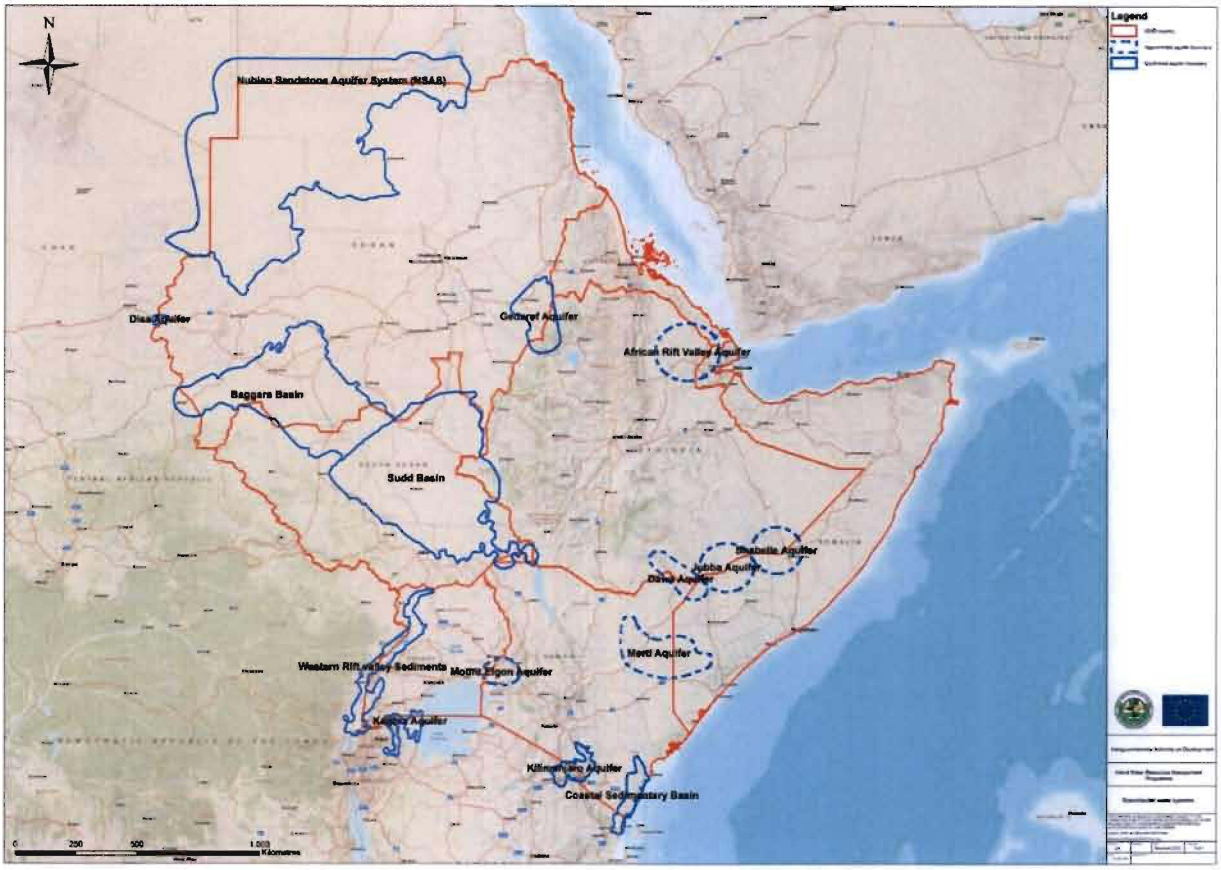
Source: IGAD Mapping, Assessment and Management of Transboundary Water Resources Project, 2009-12

Rainfall patterns in the region have become increasingly unpredictable (GHA 2004). Poor rainfall experience over successive years in some parts of the region has particularly affected agro-pastoralist communities leading to depletion of available pasture and overstretching the capacity of water resources for livestock, consequently threatening their livelihoods and food security (GHA 2004). Between July 2011 and mid-2012, a severe drought affected the entire East Africa region. This drought caused a severe food crisis across Somalia, Djibouti, Ethiopia and Kenya that threatened the livelihood of 9.5 million people. The rest of the IGAD region was also affected by this drought. Too much rainfall, on the other hand also has its own problems. From 1961-2004, 18 floods have been recorded in Somalia, killing 2,671 people and directly affecting the lives of almost 1.8 million others. In the same period, Somalia has experienced 12 droughts which have directly killed 19,671 people and affected almost four million others (Columbia University, 2005).

In term of groundwater resources, the IGAD region has large aquifer systems, some of them defined as paleo-aquifer or fossil aquifer. The Nubian Sandstone Aquifer System (NSAS) is a paleo-aquifer covering a large part of the North of Sudan. The groundwater in this aquifer was formed by infiltration during the wet periods 20,000 and 5,000 B.C.[11] Two others examples of major aquifer systems are the Sudd Basin and the Rift aquifers. The Sudd Basin aquifer is a Precambrian and volcanic rock aquifer with patches of alluvial sedimentation. This aquifer is characterized by a medium annual recharge. The Rift aquifer is a volcanic type aquifer and is characterized by a very low to medium annual recharge.

11 A very large scale GIS-based groundwater flow model for the Nubian sandstone aquifer in Eastern Sahara, W.Gossel, 2004

Fig. 2 – Main transboundary aquifers in the IGAD region



Source: IGRAC

2.2 Key issues

The IGAD region is one of the most vulnerable areas in terms of climate variability, which exerts a tremendous impact on water availability. The availability and distribution of water resources is uneven and irregular both in space and time; periodic droughts or catastrophic floods affect the region with serious human, economic and ecological consequences. This situation generates competition for available water and, when water is not available for all, it therefore becomes a source of conflicts.

As was mentioned earlier, there are a number of transboundary river basins and aquifers in the region, which could be effectively developed in order to satisfy growing water demands for different purposes. However, these basins and aquifers are not always adequately managed, and therefore development is fragmented and the resources needed do not always meet the demands. Moreover, in certain areas of the region water resources are also threatened by pollution. At present there is no cooperation framework at the level of the region and of its transboundary/shared water resources.

Beginning in 2012, the IGAD Secretariat took action, through the INWRMP, to assist the Member States in the development of a regional policy and legal framework for water resources management. The policy framework development process started with a review and analysis of the national policies and legal frameworks of the Member States. This exercise provided contents for a regional synthesis of issues and points for action (Nanni 2013).

The key issues highlighted in the regional synthesis are as follows:

(i) absence of a regional policy and legal framework to guide water resources management in the IGAD regional context;
(ii) with the exception of the Lake Victoria basins, absence of mechanisms for the sustainable management of transboundary/shared water resources (river and lake basins, and aquifers);
(iii) inadequate data and information systems;
(iv) national policy and legal frameworks which are not necessarily up to date;
(v) conflicting legal provisions contained in laws and regulations adopted over time to address specific needs;
(vi) weak implementation of water legislation, due to a variety of reasons, such as the obsolescence or lack of subsidiary legislation (regulations), shortcomings in the administration of the permit system and weak institutional capacity;
(vii) lack of stakeholder participation in the planning, development and management of water resources, particular women and disadvantaged communities;
(viii) little integration of groundwater management and protection needs into the overall management of water and other natural resources, which on various occasions has resulted in groundwater being depleted or contaminated due to development activities carried out in other areas, such as housing and sanitation;
(ix) lack of legislation and of institutional mechanisms in support of the management of local infrastructure;
(x) lack of, or weak coordination among the institutions involved in water resources management;
(xi) weak law enforcement;
(xii) lack of awareness of water resources management issues and needs, as well as of the existing policies and legislation.

Many of these issues are clearly of regional relevance, i.e., of relevance to all or the majority of the IGAD Member States. In addition, there are issues that, although arising and identified within the national contexts of the IGAD Member States, have transboundary implications, and therefore must be treated as regional issues.

2.3 Rationale for Regional Water Resources Policy

The IGAD region requires a comprehensive policy framework to guide the management of water resources. These resources are unevenly distributed in space and time, so that access to them is not always reliable. This is particularly true in the arid and hyper-arid areas of the region, and is a potential source of conflicts, especially in rural areas. Conversely, the well-watered, humid zones experience recurrent floods, which damage the livelihood of the people and sometimes cause loss of lives. Most water resources in the region are transboundary/shared.

A number of policy and strategy documents with statements and provisions relevant to water resources management are available, both at the level of the IGAD Secretariat and at that of the Member States. These statements and provisions are not always formulated in a coordinated manner, so that in some of the countries they present gaps. A regional policy framework should in the first place harmonize the existing policies on water, consolidate them into a single document and address the existing gaps. Moreover, it should call for coordination of all sectors of the economy on water resources management issues at all levels (regional, river basin or aquifer, national and local), and facilitate the integration of water, land and other natural resources so as to achieve the objectives of poverty eradication, socio-economic development, regional cooperation, environmental sustenance and peaceful coexistence. The

IGAD Member States are committed to these objectives and fully acknowledge the fact that sound and sustainable water resources management is instrumental to their achievement.

2.4 Policy formulation process

The IGAD Secretariat embarked on the implementation of the Inland Water Resources Management Programme (INWRMP) in June, 2012. One of the components of the Programme was the development of a regional policy and legal framework for water resources management.

As a first step in this direction, national reports were produced to provide a review of the policy and legal frameworks for water resources management in the IGAD Member States, as well as a critical/constructive analysis of such frameworks. These reports were validated in the course of national workshops in which officials involved in water resources management provided their observations and recommendations. Based on the validated reports, a regional synthesis was developed, which includes a summary of common issues and points for action (Nanni 2013).

The regional synthesis was discussed and validated in the course of a first regional workshop, which was held on 10-12 October, 2013, in Mombasa, Kenya. Based on the regional synthesis, a working document containing a first draft of the IGAD Regional Water Resources Policy was circulated among the IGAD INWRMP water policy and law experts and, thereafter, among the members of the INWRMP TAC.

The draft policy document was subsequently amended taking into consideration the comments received, and was then discussed in the course of a second regional workshop that took place in Kampala, Uganda, on 2-3 March, 2014. Legal and technical experts from IGAD Member States participated in this workshop.

The draft Policy was then amended to take into consideration the comments received and was again submitted to the technical teams of the Member States, for a second round of comments. It was then revised to reflect these comments.

All in all, the formulation of the Policy was based on a participatory process, with the active involvement of the INWRMP TAC and of the relevant officials of the IGAD Member States.

2.5 Implementation of Regional Water Resources Policy

The IGAD Regional Water Resources Policy will be implemented through a Regional Protocol on Water Resources, the development of which will be coordinated by the IGAD Secretariat. The Protocol will set out the principles and rules underlying regional cooperation in line with prevailing international water law, and in particular the United Nations Convention on the Law of Non-Navigational Uses of International Watercourses (New York, 1997) and the Draft Articles on the Law of Transboundary Aquifers (2008). Moreover, the Protocol will draw lessons from existing international legal instruments applying to similar contexts, such as the SADC Revised Protocol (2000).

In turn, the Regional Protocol on Water Resources will provide the basis for the formulation of bilateral or multilateral agreements on specific transboundary/shared river basins or transboundary aquifers, and the setting up of institutional arrangements to facilitate cooperation. Depending on the circumstances of the specific case, these institutional arrangements will take the form of commissions, committees and the like, or will consist of mechanisms relying on existing national institutions, as appropriate.

The implementation of the Policy and of the Protocol may require adjustments in the national policies, laws and regulations, and in the relevant institutional arrangements, so as to facilitate the implementation of joint measures to progressively meet the Policy's objectives.

Also to facilitate Policy implementation, institutional arrangements will be put in place, including the Ministerial Committee on Water Resources, the Regional Technical Committee and a Water Sector Coordination Unit (WSCU) within the IGAD Secretariat.

PART TWO – POLICY STATEMENTS

3. REGIONAL COOPERATION IN WATER RESOURCES MANAGEMENT

3.1 Water for economic integration

Policy: *Member States shall ensure that their transboundary/shared water resources are developed and managed in an integrated manner, so as to facilitate the achievement of national and regional economic integration, socio-economic development, poverty eradication, water security, environmental sustenance and peaceful coexistence on the basis of equity and mutual benefits.*

Integrated water resources management (IWRM) is commonly defined as 'a process which promotes the coordinated development and management of water, land and related resources in order to maximize economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems and the environment' (GWP 2000). The goals to be achieved through IWRM are essentially those referred to in the IGAD Water Vision. Thus, IWRM becomes a vehicle to economic integration, socio-economic development, poverty eradication, water security and environmental sustenance.

IWRM entails that all aspects of water resources management, including surface and underground water management, quantity and quality, and water uses for different purposes should be treated in a holistic manner. Moreover, it acknowledges the need to consider water resources not in isolation from the other natural resources (land, forests, living resources) and the aquatic ecosystem, since these resources interact and any action taken with regard to a given resource may exert a negative impact on another resource.

This holistic approach requires coordination among water and related institutions at all levels, both horizontal, i.e., among different sectors, and vertical, that is, among institutions at different territorial levels (regional, national, basin, provincial/district, local). Furthermore, it requires the active involvements of water users in the process of making decisions as to the directions to be taken in relation with water resources management.

3.2 Water for peace

Policy: *Member States shall endeavour to negotiate a Regional Protocol on Water Resources to guide their cooperation in the management of transboundary/shared water resources.*

Article 17 of the Agreement establishing the Intergovernmental Authority on Development (IGAD) of 1 March, 1996, enables Member States to conclude protocols in order to pursue the objectives of the Agreement.

The Protocol called for by the IGAD Regional Water Resources Policy will be based on existing international water law, as was incorporated into the UN Convention on the Law of Non-Navigational Uses of International Watercourses (UN Watercourses Convention) and the draft Articles on the Law of Transboundary Aquifers. In addition, it will draw lessons from existing agreements applying to similar regional contexts, such as the Revised SADC Protocol of 2000.

Policy: *Member States shall promote participation and cooperation in the planning, development, management, utilization and protection of their transboundary/shared water resources.*

Cooperation between Member States will entail participation in joint institutions, processes and projects relating to the Member States' transboundary/shared water resources. The IGAD Regional Protocol on Water Resources will provide a general framework for this cooperation, but this framework should be supplemented by specific multilateral and bilateral agreements, tailored to the conditions of the individual river basins and aquifers.

Policy: *Member States shall endeavour to promote and exploit opportunities for joint development of their transboundary/shared water resources to consolidate regional cooperation.*

Joint water resources development initiatives provide an opportunity to foster regional economic integration and cooperation through IWRM, and should be promoted where possible and whenever appropriate.

3.3 Water and intersectoral cooperation

Policy: *Member States shall ensure that all sectors involved in the development, utilization and management of water resources cooperate with a view to achieving regional economic integration, socio-economic development, poverty eradication, water security, environmental sustenance and peaceful coexistence.*

Water is used for a variety of purposes, including agriculture, hydroelectric power generation, domestic and industrial supply, maintenance of public health, tourism and recreation, and ecosystem maintenance. Therefore, the Regional Water Resources Policy must align with the policies and strategies relating to these sectors, since water links to, and cuts across, all of them.

The cross-cutting nature of water calls for an IWRM approach which, in turn, requires close cooperation among the sectors involved, if the objectives set out in the Regional Water Resources Policy are to be achieved. Intersectoral cooperation must take place at all levels: regional, individual transboundary/shared water resources, national and local.

3.4 Approximation/harmonization of national policies and legislation

Policy: *Member States shall take steps to approximate/harmonise their national water sector policies, plans, programmes and legislation, based on the Regional Water Resources Policy.*

The approximation/harmonization of national policies, legislation and standards for water resources in the countries sharing these resources is instrumental to equitable utilization, adequate protection and sustainable management. For instance, in the absence of policies and legislation on the permit system in one river basin country there might be no means to control water abstractions in this country, with the result that less water might become available to persons and organization within the other river basin countries. By the same token, insignificant water charges levied in one country do not stimulate users to conserve water, to the detriment of users in the other countries, for which the charges are set at a higher level. Finally, it might be difficult, if not impossible, to attain given water quality objectives for a water body if the countries sharing this water body implement different water quality standards.

Approximation/harmonization should also be sought with regard to the legislation in support of those measures which are required in order to manage emergency situations produced by water-related disasters – floods, droughts and accidental pollution, among other things. Ideally, this legislation will cover preparedness, response and mitigation measures, i.e., the identification, demarcation and mapping of the areas at risk, the activities that are prohibited or subject to authorization in those areas and the emergency powers of the relevant authorities.

Policy: *While developing their national water polices and legislation, Member States shall take into account the international and regional policies and legal instruments adopted by them and by IGAD.*

Lack of coordination among policies and legal instruments brings about confusion, which hinders policy and law implementation. The Regional Water Resources Policy mandates policy and law makers to take into account the existing policy and legal frameworks while developing new instruments, so as to absorb those principles that are already accepted and to avoid duplications.

3.5 Conflict management

Policy: *Member States shall endeavour to resolve disputes concerning transboundary/shared water resources by peaceful means.*

This policy statement is in line with Article 2, Paragraph 3, of the United Nations Charter, which reads: 'All Members *[of the United Nations]* shall settle their international disputes by peaceful means'. These means may be diplomatic, such as negotiation, good offices, mediation and conciliation, or judicial, such as arbitration and resort to the International Court of Justice. IGAD Member States may choose to indicate IGAD or the African Union as last resorts to resolve conflicts.

The statement will have to be spelled out in more detail in the IGAD Regional Water Resources Protocol.

3.6 Water for international cooperation

Policy: *IGAD shall actively participate in, and support, other African initiatives in line with the IGAD Regional Water Resources Policy, as well as create relationships with international initiatives on water resources management.*

The linkages with other African structures, platforms and initiatives should be promoted through the IGAD WSCU and the national focal points, particularly those related to the African Union and the New Partnership for Africa's Development (NEPAD), the African Ministerial Conference on Water (AMCOW), the Common Market for Eastern and Southern Africa (COMESA) and the African Water Facility of the African Development Bank (ADB).

It is also critical for IGAD to forge strong relationships with global water sector initiatives and international bodies, including UN bodies such as UNESCO and international financing institutions such as the ADB and the World Bank. On the one hand this creates a platform for regional interests to be promoted on the global agenda, while on the other hand it generates opportunities for development cooperation.

4. WATER FOR DEVELOPMENT AND POVERTY ERADICATION

4.1 Water for socio-economic development

Policy: *Member States shall consider that water has an economic value since it supports cross-sectoral regional economic integration and development, and that therefore it shall be conserved, developed and managed to provide economic benefits.*

Since it is used as an input to economic production in a number of inter-related water using sectors, hence it contributes to economic development, water has an economic value. However, being a limited and vulnerable resource, it should be used efficiently, with pricing and other mechanisms used to encourage the shifting of water to high value uses in order to maximize net economic and social benefits and contribute to poverty reduction and, eventually, eradication.

Managing water as a resource which is valuable from an economic viewpoint is also instrumental to achieving financial sustainability of water services, by making sure that water is priced in such a way as to ensure full cost recovery. However, the provision of drinking water in some rural areas and to vulnerable and marginalized communities may need to be subsidized since it aims at meeting a basic need and addressing a human right issue.

Policy: *Member States shall consider water as a social good that is essential to human dignity, poverty reduction and, eventually, eradication, and social well-being.*

The recognition of the social value of water, in addition to its economic value, is well entrenched in the national policies of the IGAD Member States. Water supports life and a range of social services. Therefore, the use of, and access to, water must consider the social benefit to people and the environment.

There should be explicit recognition that the poor should have access to water at a price that they can afford, based on subsidies directly targeted to them.

Policy: *Member States shall consider the concept of comparative advantage in water availability as a means of promoting regional trade, services and poverty reduction.*

Comparative and competitive advantage in the context of water resources management recognizes that countries that have water in abundance may produce water-consuming goods and services and export them to disadvantaged, water-poor countries, while disadvantaged countries will use their limited water resources to provide basic services to their populations in the first place, and for the production of low water consuming good and services. In this manner, the situation is win-win and national water budgets are balanced. The concept of virtual water may therefore well serve the purpose of enhancing regional cooperation.[12]

Trade in agricultural products is the main component that should be considered in the trade in water-intensive commodities (virtual water). When applied in a coherent manner at a regional level to ensure regional food security, the concept of comparative advantage between countries in the use of water may contribute fundamentally to regional trade and economic integration and at the same time to poverty eradication or reduction in the communities producing the food. The implementation of this approach will require negotiation among Member States, leading to integrated planning at a regional level.

[12] Virtual water is the water embedded in a product, i.e. the water consumed during the production process. The concept of virtual water was born in the 1990s (Renault 2002).

4.2 Water supply, sanitation and hygiene

Policy: *Member States have the social and economic responsibility to ensure sustainable access to safe water supply and sanitation within their national territories, to satisfy basic human needs.*

Access to safe drinking water and sanitation varies widely in the IGAD region. In most Member States access to the relevant facilities is less than 50% in rural areas, but somehow higher in urban areas. This situation has enormous implications from the viewpoint of child mortality and waterborne diseases. Therefore, it is a responsibility of the governments to make sure that measures are taken to reverse this course.

Access to safe drinking water and adequate sanitation services is vital to human health and has other important benefits, ranging from costs avoided and time saved to well-being, dignity and safety. The IGAD Member States subscribe to the Millennium Development Goals (MDG), which require nations to halve the proportion of their populations without access to safe drinking water by 2015.

Resolution 64/292 of 28 July, 2010, of the United Nations General Assembly explicitly recognizes the human right to water and sanitation and acknowledges that clean drinking water and sanitation are 'an integral component of the realization of all human rights'. The Resolution 'calls upon states and international organizations to provide financial resources, capacity building and technology transfer through international assistance and cooperation, in particular to developing countries, in order to scale up efforts to provide safe, clean, accessible and affordable water supply and sanitation for all'.

The goal of meeting 'basic needs' was set in the 1977 Mar del Plata Statement (United Nations 1977) and was reaffirmed through subsequent official statements of UN bodies, including during the Rio de Janeiro Earth Summit of 1992.[13] The Comprehensive Assessment of the Freshwater Resources of the World, produced by the UN Commission for Sustainable Development in 1997, stated that 'all people require access to adequate amounts of clean water for such basic needs as drinking, sanitation and hygiene' (United Nations 1997).

The obligation of states to fulfill the right to water applies only to the citizens of those states. However, water does not respect national boundaries. If an upstream country manages a transboundary/shared water resource in a way which decreases the flow downstream, it can create conditions under which it is difficult for downstream countries to fulfill the right to water of their own citizens. Hence it is a responsibility of Member States to respect the international water law principle of equitable and reasonable utilization (UN Watercourses Convention 1997, Art. 6; ILA 1966, Arts. 4 and 5).

Policy: *Member States shall ensure that the use of water for the satisfaction of basic human needs enjoys priority over water use for other purposes in all river basin and aquifer management plans.*

It is widely recognized that the provision of water to meet basic human needs such as water supply and sanitation must enjoy priority over the provision of water for agricultural and other purposes of use. In many countries water legislation now contains specific provisions on this subject.

To turn this policy statement into practice, Member States should ensure that adequate consideration is given in their water resources management plans to basic human needs in terms of water supply and sanitation. This requirement should be spelled out in the legislation on water resources.

[13] Where it was expanded so as to include ecological water needs.

Policy: *Member States shall seek to provide access to adequate sanitation facilities for rural, urban and peri-urban areas.*

Sanitation is a basic need and is essential for human dignity and public health. The lack of proper sanitation facilities is a major cause of waterborne diseases, especially for low income peri-urban and rural communities. Considering the large number of people without access to proper sanitation in many of the IGAD Member States, governments should make concerted efforts to facilitate the provision of sanitation within a reasonable time frame.

In general, sanitation in rural areas and peri-urban communities tends to be the responsibility of each household. Through community-based approaches, governments will assist in the planning and implementation of sanitation programmes that households can afford and are willing to pay for. Mechanisms will be provided to give financial support to households that cannot afford to meet the costs of basic levels of service.

Policy: *Member States shall ensure that the provision of sanitation services is integrated into the provision of water supply for basic human needs.*

In spite of the fact that most waterborne diseases are the result of poor sanitation, water supply often receives higher priority in funding from national budgets or external donors. As observed in the 3rd United Nations World Water Development Report (United Nations 2009), 'the world is not on track to meet the MDG sanitation target'. The report notes that 'between 1990 and 2006 the proportion of people without improved sanitation decreased by only 8 percentage points,' and that 'without an immediate acceleration in progress, the world will not achieve even half the sanitation target by 2015'.

The IGAD Member States are well aware of this situation, and are taking steps to increase the water supply and sanitation coverage in rural, urban and peri-urban areas. Through this policy statement, they reiterate their commitment to pay sanitation the due attention and to consider it together with water supply, within the framework of integrated programmes.

Policy: *Member States shall ensure that rural water supply and sanitation facilities are managed by institutions at the appropriate level, including the local communities, with support by their respective governments.*

It is important to empower the local communities to manage their water supplies, i.e., to take active part in the operation and maintenance of the relevant infrastructure. Through this policy statement, Member States undertake to support the communities in the establishment or strengthening of community-based systems for the management of rural water supplies.

Community Based Natural Resources Management (CBNRM) is one of the approaches promoted by IGAD for the joint management of environmental resources. It is a 'strategy for creating a climate of cooperation and promoting and maintaining peace, whose dividends are already known – allowing for investment in various sectors, implementation of environmental programmes and the development of science and technology' (IGAD 2007).

Policy: *Member States shall promote the integration of water supply and sanitation with hygiene education programmes.*

Diseases associated with lack of access to safe water and poor hygiene and sanitation are major causes of sickness and death in the region. It is the poor, especially women and children, who suffer most due to lack of hygiene, diseases and foregone opportunities. Hygiene education greatly improves the health impact of water and sanitation interventions, whereas providing safe water alone may not be sufficient.

Thus, it is important that projects providing water supply and sanitation facilities, particularly in rural areas, also provide hygiene education. Hygiene education programmes should cover knowledge related to disease transmission.

Policy: *Member States shall ensure that high priority is attached to water supply, sanitation and hygiene promotion in areas with a high incidence of HIV/AIDS.*

Because of cross-border migration and mobility,[14] and to concentrations of refugees in certain areas, there is a high incidence of HIV/AIDS in the IGAD region. This is one of the reasons why in 2007 IGAD embarked on the IGAD Regional HIV/AIDS Partnership Programme (IRAPP) with the financial support of the World Bank. Among other things, the Programme aimed at establishing a common and sustainable approach to supporting the affected populations.

Due to the effects that it produces on the active population, including mortality and morbidity, HIV/AIDS decreases the productive capacity of all sectors of the economy in the Member States, including the water sector. In addition, people with HIV/AIDS infection are highly susceptible to other diseases, particularly those related to poor water supply, sanitation and hygiene. Among other, there is a higher risk of becoming infected with malaria, which is worsened by poor drainage creating mosquito breeding places in and around communities.

Accessible and reliable water supply and sanitation, and hygiene, help people infected with HIV/AIDS stay healthy longer and enable them to keep working. Thus, in promoting activities to mitigate the impact of HIV/AIDS, such as improved water supply, sanitation and hygiene, or enhanced food security, the IGAD Member States will attach higher priority to areas with a high incidence of HIV/AIDS. The water sector will collaborate with the health sector, in particular with regard to public awareness and information campaigns.

4.3 Water for food security

Policy: *Member States shall ensure national and regional food security by developing those areas that have comparative advantage for rainfed and irrigated agriculture.*

Over 70 million people in the IGAD region, i.e., about one half of the population, are food insecure (IGAD 2005). Of these about 20 million are dependent of food aid. The region, which is only 75% self-sufficient in its food requirements, imports at least 1.5 million metric tons of cereals each year. With concerted efforts, the region could close this food gap and even become an exporter of food (Mochoge & Zziwa 2004).

Water availability is a key consideration for food security and the reduction of regional economic asymmetries, requiring that the water sector supports the IGAD objective of regional food security (IGAD Agreement, Art. 7 d) in the planning and management of water resources. While some parts of the IGAD region are better suited for coffee production, other areas have a comparative advantage in respect of other crops, or other services. Member States should promote areas of rainfed agriculture and the development of irrigation schemes, where these are viable.

[14] According to a report prepared for UNDP (Martin 2011), 19 million people lived outside of their countries of origin in 2010.

In order to facilitate the management of irrigation schemes, the establishment of water user's associations (WUA) on a sustained basis, if feasible, backed by water legislation, as appropriate, should be encouraged. The promotion of WUAs is entrenched in the national water policies of some of the IGAD Member States.

Policy: *Member States shall ensure that water resources development for irrigation in commercial agriculture is planned in coordination with other sectors in the interest of IWRM.*

Commercial irrigated agriculture is a large user of water in the IGAD region. In the past, commercial irrigation development was not planned in an integrated manner, taking into account the other sectors. This has led to single purpose dams and inefficient water use. A policy statement on dam development based on IWRM principles is elaborated in Section 9.7.

Policy: *Member States shall ensure reliable food production and enhance food security through promotion of sustainable irrigated agriculture with suitable water and land resources.*

Food production has been severely affected by droughts in various parts of the region over the last decades. Reliable access to available water for agriculture will lead to increased food production and therefore to improved food security. If properly planned and well managed, and backed by modern agricultural technology, irrigated agriculture will contribute to more reliable access to water for higher agricultural productivity.

Policy: *Member States shall promote rainwater harvesting to make access to water for agriculture, livestock and the satisfaction of domestic needs more reliable.*

Together with irrigation, rainwater harvesting will contribute to enhanced reliability of water resources for agricultural production, as well as for meeting other water needs, such as livestock watering. Rainwater harvesting is a good source of water supply, especially in arid and hyper-arid areas of the IGAD region, where it may prove to be the only reliable source of water. Rainwater harvesting mitigates hardships and enhances rural development. It increases community resilience and adaptive capacity to the impacts of climate change.

In parts of the region the potential for harvesting and storing rainwater is considerably high. Stored water may be used to satisfy agricultural and other water needs, but also to recharge groundwater aquifers and provide much needed reserves. It is however imperative that the infrastructure be maintained on a sustained basis, with the participation of the communities benefitting from it, and that institutional mechanisms in the form of water user groups or associations be established at the local/community level to facilitate operation and maintenance, as appropriate. The relevant arrangements should be reflected in national water legislation.

Policy: *Member States shall promote affordable and sustainable techniques for small-scale irrigation as an equitable measure to increase production of food and cash crops in rural areas for sustainable livelihoods and poverty reduction.*

The substance of this policy statement is that through small-scale irrigation households are enabled to diversify cropping patterns, improve nutrition and produce food for sale, thereby generating income and reducing poverty. Small-scale irrigation schemes may also be designed to provide water for livestock, aquaculture and other purposes.

If possible, the provision of water for small-scale irrigation should be integrated into water supply and sanitation programmes and projects. In this manner, the use of available water resources would be optimized, to serve more than one water use.

Policy: *Member States shall adopt measures to increase water use efficiency in agriculture. Pricing of irrigation water shall be consistent with the need to provide economic incentives for efficient use.*

Many irrigation systems in the IGAD region are inefficient, resulting in high water losses. These water losses are unsustainable, since they potentially deprive other users of scarce water resources. Irrigation schemes should aim for higher water use efficiencies, so as to enhance conservation and to make water resources available to other productive sectors.

Policy: *Member States shall ensure that water requirements for livestock receive adequate consideration at regional, national and local levels.*

Most countries of the IGAD region have an important livestock population depending on perennial and non-perennial rivers, springs, lakes, ponds and groundwater resources. However, in the arid parts of the region livestock management in rural areas is very vulnerable to the effects of droughts on grazing land and water for animals, since livestock requires access to water throughout the year. In times of water scarcity, loss of livestock exacerbates rural poverty by depriving communities of an important source of food and income from sales. When water for livestock becomes unavailable, rural communities migrate in search of new water sources that are often resorted to by other communities, and this is often at the origin of conflicts. Therefore improved access to water for livestock will significantly contribute to the reduction of rural poverty and the prevention of conflicts.

4.4 Water for energy development

Policy: *Member States shall promote the optimization of the energy development potential to provide the region with cheaper and more environmentally friendly sources of electrical energy.*

While the demand for electricity in the IGAD region shows an upward trend, the present supply will not be sufficient to meet electricity needs in the near future. It is also to be noted that not all Member States are endowed with water resources suited for hydropower development. The power supply deficit ranges from 70% in Sudan and 86% in Ethiopia to 91% in Uganda.

Regional benefits from hydropower development may be better obtained if development is planned jointly by Member States sharing the same water resources, with hydropower being developed where the potential is higher and the energy generated being exported to high-demand countries. In this manner, the exporting states will have a source of revenue, while the importers will avoid the adverse environmental impact of hydropower development.

Policy: *Member States shall encourage the development of small-scale hydropower to meet the energy needs of rural communities.*

Small-scale hydropower generation could provide power for pumping water for water supply, irrigation and rural industries, thus expanding income generation and employment opportunities for rural communities. The availability of electricity would also support schools, health and cultural activities to improve the quality of life in rural areas. Electricity is a catalyst for rural development, leading to the reduction of poverty and the prevention of rural-urban migration.

4.5 Water for industrial development

Policy: *Member States shall make water available for industrial use at the economic value of the resource.*

Water is an economic factor of production in many industrial activities including manufacturing, agro-industries, mining and tourism. Thus, industrial water users should pay the economic cost of services. Economic pricing of water encourages efficient water use and enables water resources institutions to collect sufficient revenue to sustain the provision of services.

The management of industrial effluent may have a significant impact on water quality. This also requires appropriate monitoring and control of the potential pollution, which entails costs.

4.6 Water for wildlife and national parks

Policy: *Member States shall reserve water for wildlife and national parks.*

There are a number of national parks and wildlife reserves in the IGAD region, particularly in the better watered areas of Kenya and Uganda, and in Sudan. These parks and reserves attract tourists, whose presence is beneficial to the economy. Parks and reserves need water for their very survival, therefore national and river basin plans must ensure that water in a quantity sufficient to satisfy their requirements is available.

4.7 Water for sports, tourism and recreation

Policy: *Member States shall consider water for sports, tourism and recreation.*

Like agriculture, industry and hydropower generation, sports and recreation are legitimate uses of water. Tourism, also, is a sector with great economic growth potential in the region. Therefore water resources plans must consider water requirements for sports, tourism and recreation.

4.8 Water for navigation and transport

Policy: *Member States shall consider water for navigation and transport*

Navigation and transport are also legitimate uses of water. Therefore they are to be considered in water resources plans

5. PROTECTION AND PRESERVATION

5.1 Water and the environment

Policy: *The management of a river (or lake) basin, or of an aquifer (or aquifer system), shall follow an ecosystem approach.*

The UN Convention on Biological Diversity of 1992 defines the ecosystem as 'a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit because of the interdependence of the living resources contained therein.' In its Regional Environmental and Natural Resources Strategy (IGAD 2007), IGAD has recognized the importance of promoting the development of ecosystems approaches to environment and natural resources management. In fact, all elements of an ecosystem interact, and any action targeting one element may have negative repercussions on the others. Therefore, this policy statement reiterates the need, acknowledged by Member States, to take into consideration not only water resources, but the entirety of the associated ecosystems.

Policy: *Member States shall take all appropriate measures to protect and conserve water resources and their ecosystems following a precautionary approach, according to their capabilities.*

This policy statement stems from the principle of precaution, which entails that when an activity raises threats of harm to the environment or human health, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically. A definition of the principle is embedded in the UN Convention on Biological Diversity of 1992, among other. The IGAD Regional Environmental and Natural Resources Strategy has subscribed to the principle (IGAD 2007).

By recognizing that not all Member States are at the same level in terms of human and financial resources, the statement makes due allowance for different levels of application of the precautionary approach, depending on the capabilities of each.

Policy: *Before authorizing activities that are likely to exert an adverse impact on transboundary/shared water resources, or to have transboundary implications, Member States shall ensure that environmental impact assessments are undertaken.*

In general, environmental impact assessment (EIA) has become a mandatory requirement for development initiatives of a certain nature, or of a certain size, even more so if these initiatives relate to transboundary/shared water resources. Also, international financing institutions require the environmental assessment of projects proposed for financing by them. Projects for World Bank financing are a case in point (World Bank 1999).

In line with the precautionary principle, EIA aims at identifying as early as possible in the decision-making process the likely impacts of a project on water and other natural resources, on the environment and on the well-being of the populations, thereby reducing the potential for conflicts.

IGAD Member States are promoting investment for development, leading to employment creation and poverty reduction. There is a potential for this development to compromise water quality, the environment in general and social integrity. Thus, the need arises for the states to agree on minimum common environmental compliance standards to be met prior to authorizing development initiatives.

EIA should also apply to activities that, although not entailing construction, the abstraction of large amounts of water or wastewater discharge, may exert significant negative impacts on transboundary/shared water resources, such as the introduction of alien or new species that may be invasive and detrimental. Based on the results of the EIA, lists of these species may be developed and kept up to date.

A draft Protocol on Transboundary Environmental Assessment for the IGAD region was developed under the auspices of IGAD in 2012 and is now undergoing a formal approval process. The draft Protocol contains a list of potential activities which should be subject to transboundary environmental assessment. The term 'environmental assessment' covers both EIA and strategic environmental assessment (SEA).

EIAs, and environmental assessments in general, should not only consider physical impacts, but also social, economic and cultural impacts.

Policy: *Member States shall also undertake strategic social and environmental assessments, where feasible.*

While EIAs are project-oriented, SEAs focus on the assessment of policy options and decisions, programmes, plans and the like, in so far as they may exert adverse impacts.

Policy: *Member States shall encourage the participation of stakeholders in social and environmental assessments.*

Public consultation and participation have become a major requirement of decision-making processes relating to activities, policies, strategies, programmes and plans subject to environmental assessment (World Bank 1999). Public consultation should take place as early as possible in the process.

Member States should reflect this requirement in their national legislation and define modalities and procedures for stakeholder participation in environmental assessments.

Policy: *Member States shall endeavor to reserve a basic minimum flow for the environment in all river basin and aquifer management plans.*

The role of sustainable water resources management in ensuring the integrity of ecosystems was highlighted in the declaration from the Second World Water Forum at The Hague in 2000. The Johannesburg World Summit on Sustainable Development of 2002 highlighted the role of environmental protection as a key pillar of sustainable development.

Some countries in the IGAD region and East Africa, such as Kenya and Tanzania, have policies and laws that give priority in water use, or reserve water, to river ecosystems once basic human needs are met. Given the shared nature of most water resources in the region, this approach should be followed in all Member States.

Policy: *Member States shall promote payment for ecosystem services as part of the protection and preservation of their transboundary/shared water resources.*

This policy statement refers to the application of PES (payment for ecosystem services) in a transboundary context. It considers the case in which measures for the protection, preservation and restoration of the ecosystem of a transboundary/shared water resources introduced by one member state are also beneficial to the other states sharing the same resource. In such case the state introducing the measures should be enabled to negotiate with the other states, by reason of the benefits that they will derive from the measures, to participate in the relevant financing.

5.2 Water quality management (water pollution control)

Policy: *Member States shall, individually or jointly, adopt the necessary measures to prevent and control pollution of their transboundary/shared water resources.*

Water pollution is on the increase in the region, particularly from inadequate wastewater treatment, industrial activities, including mining, and agriculture (fertilizers, pesticides, herbicides, etc.). In the peri-urban areas of large cities, which consist of high-density settlements, lack proper siting of sanitation or the absence of suitable sanitation, as well as inadequate waste management, are an increasing source of water pollution, particularly groundwater. Non-point sources are not always easily and adequately identified. As to point sources, monitoring has been limited by lack of water quality data, poor maintenance of existing water quality monitoring devices, lack of trained human resources and funding.

Pollution of transboundary/shared water resources, whether from point sources or from non-point sources, is a potential source of conflict. Therefore the Member States concerned should cooperate in its prevention and control.

The measures introduced and implemented with regard to the prevention and control of pollution of a transboundary/shared water resource by the Member States concerned should be the same, or at least comparable, on both sides of the border. This requires a high level of cooperation in deciding what should be permissible or prohibited in terms of polluting activities, wastewater discharge authorizations, wastewater treatment and other requirements.

Finally, pollution within one member state may bring about costs for another and reduce economic opportunities, as well as impose serious health costs. Member States should therefore adopt the 'polluter pays' principle to assist in the implementation of pollution control mechanisms. This principle, which is also embedded in the IGAD Regional Environmental and Natural Resources Strategy (IGAD 2007), entails that the costs of environmental pollution are borne by the polluters.

To be effective, polluter fees in the states sharing water resources should be harmonized.

Policy: *Member States shall harmonize surface water and groundwater quality standards and objectives for their transboundary/shared water resources.*

Surface water and groundwater quality standards and objectives differ from country to country in the IGAD region, with the result that if the waters of a river basin are not defined as polluted in one basin country, they may be defined as polluted in another basin country – or, at least, the latter country may legitimately claim that they are polluted. In addition, meeting water quality standards is not always easy for the countries, since they in general lack adequate institutional capacity and financial resources.

With a view to preventing the conflicts that this type of imbalance may generate, this policy statement calls for harmonization of water quality standards and objectives. However, Member States should keep in mind that too stringent standards and objectives might be difficult to be met.

In addition to harmonized water quality standards and objectives, and to the extent feasible under the circumstances, the Member States sharing transboundary water resources may agree on those chemical and organic substances which may not be discharged into waters, or introduced into the soil, or which must be controlled through prohibitions, limitations, investigations or monitoring.

5.3 Wetland management

Policy: *Member States shall protect and conserve wetlands connected to their transboundary/shared water resources based on their needs and economic conditions.*

Wetlands are essential ecological features in any landscape. They are primary habitat for hundreds of species of birds, fish, mammals and insects. They naturally filter and recharge water, slow the flow of surface water and reduce the impact of flooding. Wetlands also prevent soil erosion, and protect water bodies from potentially damaging land use activities, including agriculture.

In order to protect and conserve the wetlands which are connected to their transboundary/shared water resources, IGAD Member States will develop strategies and plans, as appropriate. These strategies and plans should be integrated into the relevant river basin or aquifer management plans, so as to facilitate the consideration of all processes of interaction between the wetlands and the basins' or aquifers' water resources.

6. SECURITY FROM WATER-RELATED DISASTERS

6.1 Protection from floods, droughts and other water-related disasters

Policy: *Member States shall commit themselves to protect human life, livestock, property and the environment against the effects of floods, droughts and other water-related disasters.*

As noted in the IGAD Environment and Natural Resources Strategy (IGAD 2007), drought events are common in the IGAD region, while floods mainly induced by the El Niño phenomenon have occurred periodically.

That to protect people and property against the effects of water-related disasters is a fundamental duty of the governments of the Member States. They have the mandate and, in principle, the mechanisms, to manage the effects of such disasters at the national, river basin/aquifer and regional level. This commitment should be demonstrated by creating an environment conducive to a reduction of disaster-related risks, such as the introduction of early warning and alarm systems, the identification of flood-prone areas, mechanisms for dealing with drought emergencies, flood and drought management planning and land use planning.

Floods and droughts affect, in particular, public health, food security and energy security, with obvious adverse consequences for socio-economic development and the rural poor.

6.2 Disaster management

Policy: *Member States shall cooperate in the prevention, management and mitigation of emergency situations resulting from floods, droughts and other natural and human-induced water-related disasters.*

Floods and drought occurrences, pollution and other accidents may spread their effects well beyond national boundaries, which makes it difficult to follow a purely national approach to disaster management, both from a technical and an economic viewpoint. Separate actions by Member States may result in contradictory approaches and may even constrain the implementation of much needed preparedness, mitigation or response measures. Thus, the need arises for integrated planning and actions at regional level and at the level of the single resource management unit – river basin or aquifer – with due consideration being paid to the interests of all stakeholders. Based on these considerations, this policy statement calls for Member States to cooperate throughout the emergency situation, i.e., starting at the preparedness level through the exchange of information, disaster risk assessment and management planning.

Information is to be exchanged timely, i.e., without delay, so as to enable the states concerned to take the measures of the case, as appropriate, and to receive external assistance whenever needed. In order to be able to exchange information without delay, and to warn each other of the occurrence of floods and droughts, Member States need to set up and operate early warning and alarm systems. System operation should take place on the basis of compatible data transmission and treatment procedures agreed upon by the Member States concerned.

Preparedness for floods and droughts requires planning both on a regional scale and at the level of the single transboundary/shared water resources management unit (basin or aquifer). However, disaster management plans may not be developed without a prior risk assessment and without determining the level of vulnerability of people, livestock and property in the flood- or drought-prone areas concerned. Therefore Member States should cooperate in the development of strategies for disaster risk assessment, as well as of management plans at the level of the individual water resources management units.

Disaster management plans should be integrated into river basin and aquifer management plans, so as to facilitate the consideration of all disaster-related issues within the basin or aquifer, and the optimal utilization of available human and financial resources.

Policy: *The IGAD Secretariat shall facilitate disaster prediction, management and mitigation.*

The ability to predict or forecast a flood or drought is fundamental to the effective management and mitigation thereof. Flooding within a shared watercourse requires the development of predictive capabilities for the entire watercourse, whereas the management of droughts requires regional early detection capability to address the implications on food security, economic integration and poverty. The development of these capabilities includes institutional mechanisms and capacity, as well as forecasting, warning and alarm systems and technologies.

Disaster management involving transboundary/shared water resources normally involves numerous stakeholders in different countries. Hence the need arises for coordination at the river basin (or aquifer) level and at the regional level.

In 1989, in response to devastating weather-related disasters, 24 countries in Eastern and Southern Africa established a Drought Monitoring Centre (DMC) with headquarters in Nairobi and a branch in Harare, Zimbabwe. In 2003, the Heads of State and Governments of IGAD at their 10th Summit in Kampala, Uganda, adopted the DMC as a specialized IGAD institution and changed its name to IGAD Climate Prediction and Applications Centre (ICPAC). A Protocol integrating the institution fully into IGAD was signed

on 13 April 2007. The territorial scope of ICPAC encompasses the IGAD Member States, as well as Burundi, Rwanda and Tanzania.

IGAD, through ICPAC, is in the best position to facilitate disaster prediction, management planning and mitigation. ICPAC's stated mission is: 'Provision of timely climate early warning information and supporting specific sector applications to enable the IGAD region cope with various risks associated with extreme climate variability and change for poverty alleviation, environment management and sustainable development of the member countries.'[15] One of ICPAC's objectives is to expand the climate knowledge base and applications in order to facilitate informed decision making on climate risk-related issues. ICPAC's functions include data acquisition, the development of regional and national climate databases, monitoring, forecasting and early warning, risk mapping and facilitating the exchange of climate data and information and of the effects thereof.

7. WATER RESOURCES INFORMATION MANAGEMENT

7.1 Water resources monitoring and assessment

Policy: *Member States shall monitor the conditions of their transboundary/shared water resources and related resources, whether individually or jointly, on the basis of monitoring programmes agreed upon among them.*

Water resource monitoring and assessment are a very fundamental element of the water resources planning process. They should cover surface water and groundwater, water quantity and quality.

Comprehensive water resources monitoring procedures and programmes are instrumental to the enhancement of the knowledge base with regard to resource availability and quality in a given transboundary/shared river basin or aquifer, which, in turn, is instrumental to river basin (or aquifer) planning. By following such procedures and programmes, Member States will be in a position to better carry out a coherent and comprehensive assessment of the status of their transboundary/shared water resources, which will be the starting point for plan development and, after plan approval, will facilitate the monitoring of plan implementation.

Ideally, the states concerned should monitor their resources jointly. However, situations vary from basin to basin and from aquifer to aquifer, so that joint monitoring may not be possible in all cases. By requiring basin and aquifer states to carry out monitoring in accordance with agreed programmes, this policy statement seeks to prevent inconsistencies with regard to the data and information acquired on the two sides of a border.

Monitoring programmes will be tailored to the relevant river basins and aquifers, and will be devised for water quantity and quality. Among other things, they will cover the parameters to be monitored, the frequency of monitoring, the methods to be used for field measurements, sampling and laboratory analysis, quality management procedures and data handling, including validation, processing and storage.

[15] http://www.icpac.net/background.html.

Policy: *Member States shall monitor and assess transboundary/shared water resources and related resources within their respective jurisdictions in accordance with common or comparable procedures, within the framework of national programmes.*

It is difficult, if not impossible, to obtain a picture of the situation at the level of a transboundary/shared water resource if there is no consistency in data collection, processing and administration at the level of the individual Member States sharing that resource. It is frequent that a number of institutions in a given country collect and process data and information each following its own procedures and standards, this leading in the majority of cases to results that are not even comparable. In order to avoid this situation, each member state should introduce procedures and methodologies – within a programme framework - to ensure that the institutions carrying out water resources monitoring and assessment arrive at results which are at least comparable.

7.2 Data and information sharing

Policy: *Member States shall cooperate, exchange data and information and consult each other on the conditions of their transboundary/shared water resources.*

This policy statement refers to the need for states sharing international river basins and transboundary aquifers to exchange data and information on a regular basis, and not only when the need arises to do so because an emergency occurs, or because of a proposed project with likely adverse effects.

A regular exchange of data and information, which will take place according to agreed protocols (i.e., standardized transmission formats), will enable IGAD Member States to plan water resources and to meet their international legal obligations.

8. WATER AND CLIMATE CHANGE

8.1 Monitoring climate change and variability

Policy: *Member States shall incorporate climate change considerations into their water resources monitoring and assessment activities.*

The severe droughts and extreme flood events occurring in the IGAD region are exacerbated by climate change and variability, with negative repercussions on key socio-economic sectors, the people's welfare and the environment.

In order to be able to assess climate change trends and risks, Member States should not limit water resources monitoring to water quality, flows and levels. They should link it to meteorological monitoring. IGAD, through ICPAC, which is one of its specialized institutions, may assist the Member States in this effort. One of ICPAC's main objectives is to expand the climate knowledge base and applications so as to facilitate informed decision making on climate risk-related issues.

8.2 Mitigation and adaptation

Policy: *Member States shall cooperate in the development of appropriate climate change mitigation and adaptation strategies and plans for their transboundary/shared water resources.*

This policy statement is in line with the 1992 United Nations Framework Convention on Climate Change (UNFCC), of which Article 4, Para. 1, (e) requires all Parties to 'cooperate in preparing for adaptation to the impacts of climate change; develop and elaborate appropriate and integrated plans for coastal zone management, water resources and agriculture, and for the protection and rehabilitation of areas, particularly in Africa, affected by drought and desertification, as well as floods.' The draft EAC Water Vision, also, calls for mitigation and adaptation, and for the development of guidelines/plans for the implementation of climate change adaptation strategies (EAC Secretariat 2012).

The application of the INWRM principle requires the integration of climate change considerations into river basin and aquifer plans.

For achieving consistency in the implementation of the strategies and plans at the level of specific transboundary/shared water resources, the Member States concerned will exchange information on the measures and tools implemented or planned to be implemented by them in order to adapt to climate change and mitigate the effects thereof.

The exchange of information referred to in this policy statement may be facilitated by IGAD, through ICPAC.

9 WATER RESOURCES DEVELOPMENT AND MANAGEMENT

9.1 River basin management

Policy: *Member States shall pursue a river basin approach to the management of their transboundary/shared water resources.*

At the International Conference on Water and the Environment held in Dublin in 1992, four principles were recommended to guide water resources development and management. Principle 1 reads: 'Fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment.' In consideration of this very nature of water, effective management should be pursued, taking a holistic approach that links development with social concerns and environment protection, water, land and other natural resources, within a river basin or groundwater aquifer (ICWE 1992).

The river basin provides the best unit for managing water resources, since within the basin context it is possible to take into account both surface water and related groundwater, water quantity and quality, and all water uses, in an integrated manner. At the basin level the interdependence between water and other natural resources may be best appreciated, water resources may be quantified and water-related disasters may be best dealt with. In addition, the river basin approach is well suited to take into account climate change-related risks.

A river basin approach to water resources management is being followed in the majority of the IGAD Member States, while in others the approach is being acknowledged as the most appropriate and therefore efforts are being made to incorporate it into the national policy and legal frameworks.

9.2 Equitable and reasonable utilization

Policy: *Member States shall utilize their transboundary/shared water resources in an equitable and reasonable manner.*

A fundamental principle of the law of international water resources, an expression of which is the UN Watercourses Convention of 1997,[16] is that of equitable and reasonable utilization. Equitable and reasonable utilization does not entail equal shares. It simply means that the states concerned must cooperate in the determination of what is equitable and reasonable for each of them under the circumstances, based on a number of factors that are listed in the Convention. The draft Articles on the Law of Transboundary Aquifers, which also spell out the equitable and reasonable utilization principle, have added to these factors elements specific to transboundary aquifers.

The determination of what is equitable and reasonable is a dynamic process, since circumstances may change in space and time. Therefore, the shared benefits of the countries may not be fixed at once in amount. This policy statement basically requires that river basin (or aquifer) states sit at the negotiation table with a view to arriving at agreed solutions.

Policy: *Member States shall, in utilizing their transboundary/shared water resources in their territories, take all appropriate measures to prevent the causing of significant harm to other Member States.*

This policy statement derives from the obligation not to cause significant harm, which is a principle of international water law and is set out in the UN Watercourses Convention (Art. 7). This obligation is one of prevention, in that it requires the member state intending to embark on a project or activity which is likely to cause significant harm to take all appropriate measures to avoid the harm. These measures include the implementation of systems of authorizations, the conduct of EIAs and the like, as appropriate. The harm may be one to water use for beneficial purposes, to human and animal health, to safety, to the water ecosystem or to the environment as such.

The obligation not to cause significant harm is complementary to the principle of equitable and reasonable utilization. While the latter serves to ensure equity in the distribution of benefits among the states concerned, but also to define the level of harm that may be acceptable to them, the former aims at minimizing damage.

Policy: *Member States shall ensure that the development and use of their transboundary/shared water resources will be regulated through appropriate functioning systems.*

In this policy statement, the term 'systems' refers to any water rights regulation system existing in the Member States, whether it be a system operated through authorizations granted by a public authority, or through concessions or permits, or a system based on different water use and development regulation tools.

The ability of IGAD Member States to regulate and control the development and use of their transboundary/shared water resources is essential to the implementation of the principle of equitable and reasonable utilization – and the 'no harm' principle - within the framework of their relations with the other Member States riparian to, or overlying, these resources. Thus, the existence of *functioning* systems at the national level of the Member States becomes a matter of concern at the regional level.

[16] The Convention is based on the Helsinki Rules of the International Law Association (ILA) of 1966, which were the result of the study of consistent state practice and of lengthy discussions among scholars from various disciplines. Therefore the Rules reflect prevailing international customary law in the field of water resources.

Water rights systems are in place in most IGAD Member States, but are not always fully implemented. Therefore this policy statement calls for action to be taken at national levels to improve the systems.

9.3 Groundwater management

Policy: *Member States shall make joint efforts to enhance the knowledge base with regard to their transboundary aquifers and aquifer systems.*

Groundwater is an important source of domestic, livestock, irrigation and industrial water supply for many areas in the IGAD region. Groundwater development, however, is carried out without sufficient knowledge of the resource conditions and potential, in terms of quantity and quality, due to lack of data and adequate regulations to monitor the relevant activities. This has led to underutilization of the resource, and in some places overexploitation and interference with existing groundwater sources, notably in coastal areas, which may result in saltwater intrusion.

There are a number of transboundary aquifers in the region, including the Merti aquifer (Kenya, Somalia), the Mount Elgon aquifer (Kenya, Uganda), the Rift Valley Aquifers (Kenya, Uganda, Tanzania), the aquifer resources shared between Eritrea and Sudan and the groundwater resources underlying the border areas of Djibouti. To gain a better knowledge of the status of these and other aquifers, the Member States concerned should adopt a concerted approach to data collection and management, so as to arrive at enhanced aquifer databases, with the information needed to assess the level of aquifer vulnerability and determine the measures to be taken in order to avoid aquifer overexplotation and water quality deterioration.

Policy: *Member States shall identify and protect vulnerable recharge areas and groundwater sources.*

Growing groundwater demands for household and other purposes of use have created a number of problems in the IGAD region, as a result of overexploitation. Some cities in the IGAD region have faced groundwater pollution due to interferences with the sewerage systems.

Based on the data in their possession, Member States will determine the degree of stress and vulnerability of their aquifers from a quantity and/or quality viewpoint, and take the relevant protection measures.

The delimitation (and, possibly, mapping) and formal declaration of the areas to be protected will be the first step in the introduction of these measures by the state concerned. A protected area may encompass the whole aquifer, the aquifer recharge area only, or given 'hot spots' within the aquifer. The measures will aim at preventing or reversing aquifer degradation, or mitigating the effects thereof. Thus, certain activities will be prohibited and other limited, i.e., will become the subject of administrative control through the permit system. Moreover, water users may be required to form groundwater user associations or committees, and to develop and implement groundwater utilization and management plans. Finally, since drilling contractors are not always qualified, so that the siting, design and casing of wells are often inadequate, it is essential that measures be introduced to control groundwater exploration and drilling activities.

The identification and demarcation of protected areas on vulnerable aquifers or parts thereof enables the states concerned to set aside the resources needed to implement the measures just mentioned.

Policy: *Member States shall promote artificial groundwater recharge.*

The artificial recharge of aquifers serves the purpose of augmenting the quantity available for use and is of particular importance in water-scarce areas. Aquifer recharge may take place through boreholes, earth

dams and the like, but the process should be subject to control in order to prevent causing damage to the resource.

9. 4 Water resources planning

Policy: *Member States shall base the planning, development, protection and management of their transboundary/shared water resources on the IWRM principle, taking into account the cross-cutting nature of water and involving active water user and stakeholder participation.*

Integrated river basin (or aquifer) management is the process of coordinating the development, protection, conservation and management of water, land and related resources across sectors within the individual resource management unit – the river basin or the aquifer – with a view to maximizing the benefits deriving from these resources in an equitable manner, at the same time preserving and, when necessary, restoring aquatic ecosystems (GWP 2000). This coordination needs to be both horizontal (among water-using sectors) and vertical (among different territorial levels).

The participatory approach to water resources planning, which derives from Dublin Principle 2 (ICWE 1992),[17] advocates full consultation and involvement of water users, management institutions and decision makers in the planning, and thereafter implementation, of water resources development, use and protection measures. In particular, measures that may be unpopular, such as imposing limitations to, or curtailing, existing water rights, or declaring embargoes on future water uses, are best understood, and are more easily implemented, if those who are affected by them are involved in the process leading to the relevant planning determinations.

Since the individual resource management units do not recognize political boundaries, it goes without saying that water resources planning also requires cooperation among Member States sharing the same resource management units. Thus, IWRM needs to be incorporated both into national policies and legislation and into agreements and arrangements relating to transboundary/shared water resources.

Policy: *Member States shall endeavour to plan their transboundary/shared water resources jointly.*

While it is not obligatory for states under international law to plan water resources jointly, it is widely recognized that when states choose to opt for a joint effort the water resources management objectives agreed upon in a plan are achieved more easily, because the plan becomes the obligatory reference for authorizing projects and activities within the national territories, or for introducing the measures that may be required in order to protect or conserve water resources.

Development projects on transboundary/shared water resources must be consistent with the plans applying to these resources.

9.5 Water demand management (WDM)

Policy: *Member States shall promote WDM as a requirement for integrated planning and management of water resources, particularly transboundary/shared water resources.*

[17] 'Water development and management should be based on a participatory approach involving users, planners and policy makers at all levels'.

WDM means managing consumptive water demands in order to postpone or avoid the need to develop new resources, thereby minimizing the impacts of new water abstractions and of the required infrastructure. This means that emphasis is to be placed on making sure that the water that is already available is used in the best manner. Thus, WDM entails the use of pricing mechanisms, control of water abstractions, the detection of leakages and of unaccounted for water in water supply systems and the improvement of water infrastructure.

WDM calls for flexibility to be built into national legal frameworks, thereby allowing water institutions to shift water resources to those water users who make the best use of them, whether they be individual users or water-using sectors. It will allow, for instance, the shifting of water from crops consuming large amounts of water to more valuable, less water-consuming crops. This flexibility will also serve the purpose of meeting climate change adaptation needs.

If WDM is beneficial from a national viewpoint, it should definitely be pursued within the regional context. Following a WDM approach, a river basin or aquifer state will make good use of the basin waters located within or under its territory before negotiating a larger share with the other basin or aquifer states.

9.6 Alternative sources of water

Policy: *Member States shall promote alternative sources of water, such as rainwater harvesting, desalination, reuse of water and wastewater, and water recycling.*

This policy statement is of particular importance for the arid and hyper-arid areas of the region, where localized conflicts over water may occur among farmer communities and pastoralists competing for scarce water resources. The instability generated by these conflicts may be avoided or mitigated by making water more reliable. This entails the construction of infrastructure such as sand dams, water storage structures, wells to replenish aquifers, etc., and the relevant installations. For this infrastructure to be sustainable, it needs to be maintained adequately. Therefore the IGAD countries should clearly define responsibilities with regard to operation and maintenance and establish the relevant institutional mechanisms, particularly at the community level.

If not adequately controlled, the use of unconventional water sources such as wastewater may bring about risks for public health. In the IGAD region farmers tend to use raw sewage for irrigation, this exerting a negative impact on health. Therefore, the countries should adopt legislation to define requirements for wastewater reuse and the circumstances under which it is prohibited – for irrigating crops to be consumed raw, for instance.

Policies with regard to the introduction of financial incentives to stimulate water recycling and reuse, and the use of alternative, non-conventional water sources, as well as to facilitate the operation and maintenance of storage infrastructure, should also be introduced by the IGAD countries.

9.7 Dam development and management

Policy: *Member States shall promote, and agree on a framework for, the integrated planning, development and management of dams so as to ensure dam safety and optimize the use of transboundary/shared water resources, maximize the benefits deriving therefrom and take both positive and negative impacts into account for both upstream and downstream states.*

The dams of the past have tended to serve as single-purpose developments, such as in the case of hydropower generation projects, little attention being paid to the potential for resource development for multiple purposes uses. Dams may also meet irrigation needs, flow regulation and flood control, at the same time meeting water demands for recreation and sports, as well as minimum flow requirements, to the benefit of living organisms. Therefore, all dams, whether large or small, should be designed so as to optimize benefits, consistent with environment protection.

Dams may have varying environmental and social impacts. Negative impacts include inundation of productive farmlands, habitats, cultural sites, and displacement of communities. In some instances, there may be a concomitant increase in diseases such as malaria, cholera, dysentery and bilharzia. Comprehensive and objective assessment of the economic, social, and environmental impacts should be carried out and adequate mitigation measures put in place.

This policy statement also calls for cooperation with regard to the setting of minimum agreed standards to be followed to ensure dam safety.

Policy: *Member States shall promote and facilitate the participation of stakeholders in decision making with regard to dam development and, where appropriate, with provision of support to vulnerable and marginalized communities to ensure their effective involvement in decision making, as well as the protection of their cultural heritage.*

Dams, particularly large dams, have significant impacts on the environment and society. To prevent negative impacts from materializing, all stakeholders who may be affected by dam development need to be involved in decision making, including government officials of the Member States concerned, representatives of river basin organizations and the communities who will be directly affected. Member States should define mechanisms for effective stakeholder participation in the decision-making process, including modalities for such participation.

The participation of vulnerable and marginalized communities in the decision-making process may require that Member States make financial resources available for such purpose, to cover transport, accommodation and the like. In addition, this also includes awareness raising, access to information, training and confidence building.

10. INSTITUTIONAL FRAMEWORK

10.1 IGAD regional framework for water resources management

Policy: *An institutional framework shall be established at the regional level to facilitate the implementation of the Regional Water Resources Policy. This will include a Ministerial Committee on Water Resources, a Regional Technical Committee and a Water Sector Coordination Unit (WSCU) within the IGAD Secretariat.*

The Ministerial Committee on Water Resources will be responsible for considering and endorsing regional policy documents on water resources. The Committee will be supported, from the technical viewpoint, by a Regional Technical Committee, which is the successor of the INWRMP TAC.

IGAD was born as a regional integration organization whose mandate did not necessarily include water resources. With time, however, it has realized that water resources are a major factor for regional integration, and has embarked on a number of initiatives, such as the INWRMP and the Drought Resilience Programme. Water is now on IGAD's agenda, this entailing that it should be dealt with by a specialized unit attached to the Secretariat, i.e., the WSCU.

Policy: *The IGAD Secretariat shall coordinate the implementation of the Regional Water Resources Policy, promote capacity development, research and technology development, and facilitate the generation and sharing of data and information. The IGAD Secretariat shall support Member States in the negotiation of the Regional Water Resources Protocol.*

The IGAD Member States have undertaken, through IGAD, to 'preserve, protect and improve the quality of the environment', to 'ensure the prudent and rational utilization of naturel resources', to 'develop harmonious environmental management strategies and policies' and to coordinate their efforts towards the sustainable management and utilization of shared natural resources' (IGAD Agreement, Art. 13A). The Regional Water Resources Policy is the natural outcome of these undertakings, and it is only logical that the IGAD Secretariat is designated as the overall promoter and coordinator of policy implementation.

In addition to coordinating the implementation of the Regional Water Resources Policy, the IGAD Secretariat will play the role of facilitator, by providing support in the supervision of regional projects and programmes, identifying sources of funding, including those for technical experts should they be needed. .

Under the IGAD Agreement (Art. 17, Para. a), 'Member States shall conclude such protocols as may be necessary to execute the aims and objectives of this Agreement'. Since the mandate of IGAD covers, among other, policy harmonization and the promotion of cooperation in the sustainable management and utilization of shared natural resources, including water resources, the IGAD Secretariat is in the best position to facilitate the Protocol negotiation process.

10.2 Institutional arrangements for transboundary/shared water resources

Policy: *Member States shall endeavour to establish joint institutions to advise on, and coordinate, the sustainable development, equitable utilization and protection of their transboundary/shared water and related resources.*

Joint institutions in the form of river basin commissions or committees, authorities or consultation mechanisms are the best solution to problems relating to the management of transboundary/shared water resources. IGAD has long recognized the need for strengthening cooperation in the management of transboundary/shared water resources, and for promoting the 'establishment of region-level river basin organisations where these do not exist' (IGAD 2007).

It will be up to the states represented in a joint institution to decide, through the relevant agreement, on the functions and powers to be vested in the institution. Functions may simply be limited to data and information coordination and management, with advice being provided to the states on specified issues based on the data available, to joint river basin or aquifer planning and the approval of major projects. A number of options are possible and the choice will depend on the agreements between or among the Member States concerned.

Policy: *When Member States set up a joint institution for their transboundary/shared water resources, they shall make efforts to plan the use, development, protection and management of those resources through that institution.*

A joint institution within the meaning of the Regional Water Resources Policy is perhaps in the best position to facilitate the planning of a transboundary/shared river basin, or of a transboundary aquifer. When such an institution is in place, Member States should take advantage of its existence and not engage in planning through other means.

Policy: *Joint institutions for transboundary/shared water and related resources are formed following simple modalities and an evolutionary approach, suited to the specific conditions of the river basin or aquifer under consideration, and to those of the Member States.*

There is no golden rule as to the structure of a joint institution, but all the states will be represented in it. The structure's complexity will depend on the human and financial resources available, this implying that the mechanism may be very simple, consisting of delegations of the Member States concerned and based on existing national institutions acting each as secretariat on a rotation basis, or more elaborated, with a policy-making organ made up of the heads of state or government, a governing organ composed of water ministers, a technical organ – technical advisory commission or committee – and a permanent secretariat headquartered in one of the Member States, along the lines of the Nile River Basin Commission. A number of options may be considered for setting up a joint institution, including that of an evolutionary approach starting with a simple mechanism and ending up with a full-fledged river basin commission.

Policy: *Joint institutions shall regularly inform the IGAD WSCU of progress made in the implementation of this Policy within their respective river basins or aquifers.*

A regular flow of information will enable the WSCU to facilitate an exchange of experiences among different joint institutions, which may serve to improve the management of transboundary/shared water resources there where difficulties arise.

10.3 Institutional arrangements at national levels

Policy: *The ministries responsible for water resources in the Member States shall coordinate the implementation of the Regional Water Resources Policy at the national level.*

Lack of coordination among national institutions has been indicated as a serious constraint to IWRM in the IGAD Member States. In some instances water resources development is authorized by the relevant authority without having regard for its possible adverse effects on existing water uses, or on the conditions – quantity and quality – of water resources. This may result in the deterioration of water resources intended for domestic supply, losses in terms of fish life and the like. By the same token, tree cutting authorized by the authority in charge of forestry without consulting the water authority may exert a negative impact on water resources and even contribute to floods. These and many other examples lead to the conclusion that efforts are needed in the Member States to adjust their institutional mechanisms for water resources management at the national level so as to ensure the necessary coordination.

Policy: *Member States shall take steps to decentralize water management functions to the lowest appropriate level, but shall establish appropriate linkage mechanisms to coordinate water management between different levels of administration.*

This policy statement intends to facilitate the implementation of Guiding Principle No. 2 of the Dublin Statement on Water and Sustainable Development (1992),[18] which spells out the participatory approach to water resources management. The principle calls for certain decisions to be made at the lowest appropriate level, with the active involvement of all stakeholders, but it might become difficult to implement it in large countries such as Ethiopia, Kenya, Sudan and Uganda, if water management functions are not decentralized, i.e., performed closer to the stakeholders.

Functions will be decentralized to the basin level and/or at the level of the decentralized administrations responsible for water resources, depending on the size and hydrological conditions of the countries concerned. It will be essential, however, to avoid duplications of functions whenever two or more territorial levels of administration coexist. The domestic legislation of the Member States will have to provide for interaction and coordination mechanisms, as appropriate.

It is important to ensure that the decentralized institutions cooperate with the joint institutions for transboundary/shared water resources (international river basin commissions and the like), there where these have been established.

10.4 Monitoring and evaluation

Policy: *Progress in the implementation of the Regional Water Resources Policy will be assessed through a coherent and transparent monitoring and evaluation system acceptable to the Member States.*

Monitoring and evaluation with regard to the implementation of policies and companion strategies, plans and programmes are instrumental to policy sustainability. The monitoring and evaluation system will be implemented at various levels: regional, transboundary/shared river basin and transboundary aquifer and national. The monitoring and evaluation process will be coordinated and facilitated by the IGAD Secretariat.

11. STAKEHOLDER PARTICIPATION AND CAPACITY BUILDING

11.1 Stakeholder participation

Policy: *Member States shall promote the involvement of stakeholders in the development and management of transboundary/shared water resources at the appropriate levels.*

According to Guiding Principle No. 2, adopted at the International Conference on Water and the Environment held in Dublin, 1992, 'Water development and management should be based on a participatory approach, involving users, planners and policy- makers at all levels,' not limited to government ministries and agencies.

[18] International Conference on Water and the Environment, Dublin, Ireland, 26-31 January 1992.

The Dublin Principles recognize that a participatory approach is the only means for achieving long-lasting consensus and common agreement. Participation is about taking responsibility, recognizing the effects of sectoral actions on other water users and aquatic ecosystems and accepting the need for change in behaviours to improve the efficiency of water use and allow the sustainable development of the resource (GWP 2000). In addition, the inclusion of stakeholders in planning and decision-making allows incorporation of local knowledge related to the potential impacts of climate change and adaptation alternatives. This, also, often leads to more realistic and effective solutions.

Among others, international financing institutions such as the African Development Bank (ADB) tend to adopt a cautious approach to large water resource projects— particularly those involving dams and storage—given the record of environmental and social hazards associated with such projects. These projects are to be justified in the public interest, and stakeholders must be provided with the opportunity to comment on the justification, with their views being considered.

The more stakeholders are called to participate in decision making, the more successfully are decisions relating to water resources management implemented. Stakeholder participation in water resources management may take place at various levels. It may concern decisions on applications for water use permits, or the planning of water resources within the context of a river basin or of an aquifer.

At the grassroots level, stakeholders/water users will be called to participate in the operation and maintenance of local infrastructure, such as a well, a water point or irrigation infrastructure, and in decisions on water resources development projects and water distribution. To facilitate this participation, Member States should encourage water users to form water users' groups, associations or committees.

Policy: *Member States shall afford the communities potentially affected the opportunity to participate in the decisions, management measures or projects relating to transboundary/shared water resources.*

This policy statement aims at preventing situations in which local communities suffer because of a top-down decision made by a government to implement a project which will affect them negatively, or to introduce unpopular water management measures. When a dam is planned to be constructed on a transboundary/shared water resource without the communities downstream being invited to voice their concerns prior to construction, these communities might end suffering after project completion because of loss of pasture land and fishery resources. This may also occur in the case of projects initiated by governments, normally with external support, to the benefit of given communities. In most cases the communities are not consulted on the projects, and consequently they do not take ownership.

Water management measures are those that may be introduced and implemented in order to improve water use, protect water bodies from pollution, and address disaster prevention needs and the like.

11.2 Gender mainstreaming

Policy: *Member States shall ensure the involvement and participation of women, vulnerable groups, children and the elderly in the provision, management and safeguarding of water resources.*

In particular, women are water providers, water users and water guardians. They ensure the safety of wells in rural areas from the viewpoint of hygiene. They walk miles if water is not readily available to guarantee a minimum of supply for their families. In spite of this, their presence is seldom required when decisions as to water resources development and management are to be made.

In recognition of their important role, women should be included and empowered to fully participate in decision making at all levels. Member state water institutions should commit themselves to integrate women into decision-making processes in accordance with the Dublin Principles.

Policy: *Member State institutions shall implement the principles, goals and objectives of gender mainstreaming in their water resources-related programmes.*

The commitment of Member States to mainstream gender in their programme is demonstrated by the launching by IGAD, in October 2013, of the regional Strategy for Higher Representation of Women in Decision Making Positions (HRWDM) and the Regional Action Plan (RAP) for Implementation of United Nations Security Council Resolutions (UNSCRs) 1325 and 1820 and the IGAD Women and Peace Forum (IWPF).

11.3 Capacity building and awareness raising

Policy: *Member States shall promote capacity building at all levels, to ensure that decision makers, water managers and the water users and communities involved in water resources management in the IGAD region have the requisite knowledge and tools.*

Knowledge of water issues by water resources experts, water users and decision makers at all levels is essential for effective water resources management. Water resources management functions include data collection, processing and analysis, assessment, the issuance and administration of permits for water use and wastewater discharge, resource monitoring and control, basin (and aquifer) planning and development, research and law enforcement. The implementation of these activities requires specialized expertise which is not always available in the IGAD region, due to lack of sufficient personnel and lack of training for the available staff.

Capacity building should cover the various aspects of water resources management, ranging from the purely technical aspects related to the operation and maintenance of local infrastructure, or the handling of water-related data, to policy and legislation. The types of subjects that will be included in the relevant capacity building programmes will depend on the stakeholders to be targeted. In any case, particular attention should be devoted to IWRM and to disaster forecast, preparedness and early warning.

Support to capacity building in disaster management may be provided by IGAD, through its Climate Prediction and Applications Centre (ICPAC), since this is one of the functions of ICPAC.

Policy: *Water institutions in the region at all levels shall cooperate with a view to developing and sharing capacity to carry out their mandates in an effective and efficient manner.*

The IGAD region suffers from shortages and/or imbalanced distribution of financial and human resources. This variation in access to resources directly impacts on the ability of actors in different Member States to cooperate on an equal basis in the implementation of IWRM. Therefore the scope of cooperation will have to be expanded so as to cover exchanges of knowledge and technical skills, including water law and policy-focused knowledge.

Policy: *Member States shall launch awareness-raising campaigns with a view to making water-related issues, policies and legislation known to stakeholders and the public at large.*

Awareness raising is a vital part of a participatory approach to water resources management. Before interacting with the relevant public authorities on water management issues and decisions to be made, stakeholders need to be informed and educated.

Moreover, when the issues arising in connection with water resources management are not known, it becomes difficult to explain the reasons why given management measures – perhaps unpopular - are introduced, or new legislation is enacted. In addition, in default of adequate awareness-raising campaigns, water policies and legislation are neither understood, nor known by those to whom they should apply, with the result that they are not respected.

Policy: *Member States shall promote the incorporation of IWRM into water-related education curricula.*

All opportunities to incorporate IWRM into education curricula should be actively pursued. This policy statement relates to initiatives for the promotion of INWRM in formal education and training programmes on the one hand and, on the other, informal training, twinning and exchange or secondment opportunities between regional, public, non-governmental and private sector water institutions.

11.4 Research and development

Policy: *Member States shall cooperate in undertaking research and development with a view to attaining the objectives of the Regional Water Resources Policy.*

Research and technology development are generally fragmented and mainly geared towards addressing national issues, while there is also a need for them to address specific challenges and requirements in the IGAD region. Research should focus on local solutions and appropriate technology, and follow a coherent and coordinated approach.

The implementation of this policy statement requires improved communication and collaboration between academic, research and scientific institutions.

Policy: *Member States undertake to share technologies and information to improve the development, protection and management of transboundary/shared water resources in the region.*

Sharing of water-related technology and information is a vital step towards regional integration and cooperation, both in terms of building regional capacity and in developing common understanding, synergy and trust between Member States and institutions.

12. FINANCING WATER RESOURCES DEVELOPMENT AND MANAGEMENT

12.1 Financial sustainability

Policy: *Member States shall ensure adequate financial resources for the development and management of their transboundary/shared water resources, and for the protection, preservation and restoration of these resources' ecosystems.*

The water sector has a very high potential for increasing regional and national economic development, but in most IGAD countries the installed hydraulic infrastructure is getting old and there are no or limited investments to maintain or replace it. This is at the source of inadequate water distribution and poor water quality. Therefore, financial resources are needed for infrastructure development, the maintenance of existing infrastructure and also for capacity building, institutional development and research and technology development.

In general, water charges and polluter fees are paid into the state budgets, or into the local budgets. Once there, they are normally reinvested in any activity of interest to the states concerned, not necessarily in water resources projects, with the result that there may be no funds available for infrastructure construction, O&M and repairs. Therefore, the establishment of autonomous water resources funds would allow for investment in infrastructure, especially in rural areas. Water harvesting projects and groundwater recharge are of particular importance, since they increase water availability and reliability for farmers and pastoralists in arid and hyper-arid areas, thus contributing to conflict reduction or mitigation.

Financial resources may be invested in both national projects and in regional projects on transboundary/shared water resources.

Finally, water management becomes easier if water users are induced to invest in water-saving technologies, effluent treatment and water conservation through the provision of economic incentives. These incentives may consist of subsidies, exemptions from water charges and other related fees, tax holidays and the like. Member States should consider providing economic incentives to those embarking on the development, introduction or modification of technologies, processes and equipment aimed at reducing water consumption or contaminant loads for wastewater discharges. The powers of the water authorities in this respect should be reflected in the water legislation.

Policy: *Member States shall promote appropriate financing mechanisms to ensure the sustainability of water resources development and management.*

When water resources are put to economic production, their use should be subject to payment, with a view to meeting the costs inherent to water resources development and management. Water charges are also an incentive to use water more efficiently and to conserve water resources. In imposing a charge for water use, account should be taken of the social functions of water, which make it imperative that everyone has access to a basic supply of water.

12.2 Public-Private Partnerships

Policy: *Member States shall develop partnerships with communities, civil society organisations and non-governmental organisations to support the development and management of water resources in the region.*

The development of partnerships between IGAD, joint institutions and communities, civil society organizations and non-governmental organizations will enhance financial and material support for IWRM programmes and activities. This will, in turn, serve to enhance the sustainability of programmes. Such partnerships may require the creation of regional or basin/aquifer-level fora or networks to facilitate the involvement of these groups.

Policy: *Member States shall encourage partnerships between joint institutions or governments and the private sector where these could contribute to efficient management of resources, the delivery of services and lead to higher inflow of investment capital to the sector.*

Public-private partnerships provide an opportunity to leverage private sector technical and managerial expertise, as well as finance, in the development and management of water resources and associated services. As such, this option may be considered where capacity is limited in water sector institutions. However this requires establishment of appropriate regulatory and management frameworks so as to ensure adequate provisions for service delivery to the poor.

GLOSSARY

Activity is meant to include projects.

Aquifer means a permeable water-bearing geological formation underlain by a less permeable layer and the water contained in the saturated zone of the formation.

Aquifer state means a state in whose territory any part of a transboundary aquifer or aquifer system is situated.

Aquifer system means a series of two or more aquifers that are hydraulically connected.

Disaster means drought, flood and other water-related disaster, whether natural or man-made.

Discharge zone means the zone where water originating from an aquifer flows to its outlets, such as a river, a lake, an oasis, a wetland or the ocean.

Emergency means a situation that causes, or poses an imminent threat of causing, serious harm to river basin or aquifer states or other states and that results suddenly from natural causes, such as drought, torrential rains, floods, landslides or earthquakes, or from human conduct, including industrial accidents.

Environmental assessment means a procedure that ensures that the environmental implications of decisions are taken into account before the decisions are made and includes environmental impact assessment (EIA) and strategic environmental assessment (SEA).

Environmental impact assessment (EIA) means the application of an agreed procedure for evaluating the likely impact(s) of a proposed activity on the environment.

Horn of Africa, for the purposes of the IGAD Regional Water Resources Policy, includes Djibouti, Eritrea, Ethiopia, Kenya, Somalia, South Sudan, Sudan and Uganda.

IGAD Agreement means the Agreement Establishing the Inter-Governmental **A**uthority on Development (IGAD).

IGAD Member State means a state Party to the IGAD Agreement.

IGAD region means the territory of the IGAD Member States as a whole.

Industrial use of water includes manufacturing, agro-industries, mining and tourism.

Integrated Water Resources Management (IWRM) means a process which promotes the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems *(GWP)*.

Joint institutions means the institutions that are established between or among Member States to advise on, and coordinate, the sustainable development, equitable utilization and protection of transboundary/shared water and related resources.
Member state means IGAD member state.

Pollution means any detrimental alteration in the composition or quality of the waters of a river basin, aquifer or aquifer system which results directly or indirectly from human conduct.

Recharge zone means the zone which contributes water to an aquifer, consisting of the catchment area of rainfall water and the area where such water flows to an aquifer by runoff on the ground and infiltration through soil.

Regulation means the use of hydraulic works or other continuing measure to alter, vary or otherwise control the flow of the waters of an international river basin.

River basin means a geographical area determined by the watershed limits of the system of waters, including surface water and groundwater connected thereto, constituting by virtue of their physical relationship a unitary whole and normally flowing into a common terminus.

River basin state means a state in whose territory part of a transboundary/shared river basin is situated.

Sanitation refers to the provision of facilities and services for the safe disposal of human urine and faeces.[19]

Stakeholder means any person or group of individuals or institution, or group of institutions that has or have an interest in an activity or project, and includes both intended beneficiaries and intermediaries, those negatively and positively affected, and those involved and/or those who are generally excluded from the decision-making process *(draft Protocol on Environmental Assessment)*.

Strategic environmental assessment (SEA) means the application of an impact assessment to policies, plans and programmes.

Transboundary aquifer or **Transboundary aquifer system** means respectively, an aquifer or aquifer system, parts of which are situated in different states.

Transboundary/shared river basin means a river basin parts of which are situated in different states.

Transboundary/shared water resources refers to river and lake basins, aquifers and aquifer systems.

UN Watercourses Convention refers to the Convention on the Law of Non-Navigational Uses of International Watercourses, adopted by the General Assembly of the United Nations at New York, on 21 May 1997.

Water resources include surface water and groundwater.

Water security means the capacity to provide sufficient and sustainable quantity and quality of water for all types of water services and protect society and the environment from water-related disasters (Tunis, 28 January 2008, ACOW and ADB).

[19] WHO (www.who.int).

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