



**Southern African Development  
Community**

**REGIONAL WATER POLICY**

**August 2005**

## CONTENTS

ABBREVIATIONS AND ACRONYMS .....	iv
EXECUTIVE SUMMARY .....	v
PART ONE - BACKGROUND TO POLICY .....	1
1. POLICY CONTEXT .....	2
1.1 Water, the Engine of Regional Growth .....	2
1.2 Policy Principles.....	2
1.3 Purpose of the Document.....	4
2. WATER RESOURCES MANAGEMENT CHALLENGES AND OPPORTUNITIES .....	6
2.1 Water Resources in the SADC Region .....	6
2.2 Key Issues .....	8
2.3 Rationale for Regional Water Policy .....	10
2.4 Policy Formulation Process .....	11
2.5 Conceptual Policy Framework .....	11
2.6 Policy Structure .....	11
2.7 Implementation of Regional Water Policy .....	12
PART TWO – POLICY STATEMENTS.....	16
3. REGIONAL COOPERATION IN WATER RESOURCES MANAGEMENT .....	17
3.1 Water for Economic Integration.....	17
3.2 Water for Peace .....	18
3.3 Water and Inter-Sectoral Cooperation .....	19
3.4 Harmonisation of National Policy and Legislation.....	19
3.5 Conflict Management in Water Resources Management.....	20
3.6 Water for International Cooperation .....	21
4. WATER FOR DEVELOPMENT AND POVERTY REDUCTION.....	22
4.1 Water for Socio-Economic Development .....	22
4.2 Water Supply, Sanitation and Hygiene .....	23
4.3 Water for Food Security .....	25
4.4 Water for Energy Development .....	28
4.5 Water for Industrial Development.....	29
4.6 Water for Sports and Recreation.....	29
5. WATER AND ENVIRONMENTAL SUSTAINABILITY.....	30
5.1 Water and the Environment.....	30
5.2 Water Quality Management.....	31
5.3 Alien Invasive Species .....	32
6. SECURITY FROM WATER-RELATED DISASTERS .....	33
6.1 People’s Protection from Floods and Droughts.....	33
6.2 Disaster Prediction, Planning and Mitigation.....	33
7. WATER RESOURCES INFORMATION MANAGEMENT.....	35
7.1 Data and Information Acquisition and Management .....	35
7.2 Information Sharing.....	35
7.3 Water Resources Assessment .....	36
8 WATER RESOURCES DEVELOPMENT AND MANAGEMENT .....	37
8.1 River Basin Approach.....	37
8.2 Integrated Planning.....	38

8.3	Water Demand Management .....	39
8.4	Alternative Sources of Water .....	40
8.5	Dam Development and Management.....	41
8.6	Affected Communities.....	42
<b>9.</b>	<b>REGIONAL WATER RESOURCES INSTITUTIONAL FRAMEWORK .....</b>	<b>44</b>
9.1	SADC Secretariat .....	44
9.2	Shared Watercourse Institutions .....	45
9.3	Institutional Arrangements at National Levels .....	47
9.4	Monitoring and Evaluation .....	48
<b>10.</b>	<b>STAKEHOLDER PARTICIPATION AND CAPACITY BUILDING.....</b>	<b>50</b>
10.1	Participation and Capacity Development .....	50
10.2	Gender Mainstreaming.....	51
10.3	Capacity Building and Training .....	52
10.4	Research, Technology Development and Transfer.....	53
<b>11.</b>	<b>FINANCING WATER RESOURCES DEVELOPMENT AND MANAGEMENT .....</b>	<b>54</b>
11.1	Financial Sustainability.....	54
11.2	Cost Reduction.....	54
11.3	Public-Private-Civil Partnerships.....	55
	<b>DEFINITIONS.....</b>	<b>57</b>

## **ABBREVIATIONS AND ACRONYMS**

AMCOW	African Ministerial Conference on Water
EIA	Environment Impact Assessment
GDP	Gross Domestic Product
GWP	Global Water Partnership
GWP-SA	Global Water Partnership-Southern Africa
IWRM	Integrated Water Resources Management
NEPAD	New Partnership for Africa's Development
NGO	Non governmental Organisation
<b>PPP</b>	<b>Public-Private Sector Partnerships</b>
RISDP	Regional Indicative Strategic Development Plan
RSAP	Regional Strategic Action Plan
SADC	Southern African Development Community
SADC-WD	SADC Water Division
SWCI	Shared Watercourse Institution
UN	United Nations
WRTC	Water Resources Technical Committee
WSCU	Water Sector Co-ordinating Unit (of SADC)
WSSD	World Summit on Sustainable Development

## EXECUTIVE SUMMARY

### Background

1. The water resources of the SADC region are vital for sustainable economic and social development of the region. Apart from sustaining a rich diversity of natural ecosystems, the region's water resources are critical for meeting the basic needs related to water supplies for domestic and industrial requirements, and for sanitation and waste management for about 200 million people. In addition, there is a need for increasing food security through better management of rain-fed and irrigated agriculture, aquaculture, and livestock production; and improving access and availability of cheap energy through hydropower. Despite the importance of water in the region there is, presently, no long-term policy and strategy for the development and management of the region's water resources, and in particular the management of transboundary watercourse systems.
2. The SADC region has 15 major river basins which are transboundary or watercourses shared by two or more countries. They range from the large Congo River Basin (3,800,000 square kilometres), the Zambezi River Basin (1,400,000 square kilometres covering eight SADC Member States) to the Umbeluzi River Basin (5,500 square kilometres) shared by only two countries. Thus one of the characteristic features in the region is shared watercourse systems, with complex water rights and potential conflicts over utilization of the shared resources. This common heritage also presents tremendous opportunities for cooperation in managing the shared resources for regional economic development and regional integration.
3. Since the mid 1990s SADC Member States have engaged in wide ranging and intense consultations on development of the water sector in the region. This has brought about a heightened awareness of the importance of water for socio-economic development, regional integration and poverty reduction. However there are a number of institutional, technical, economic, social and environmental factors which, to one degree or another, still constrain effective management<sup>1</sup> of the region's water resources. These include:
  - (i) Weak legal and regulatory framework.
  - (ii) Inadequate institutional capacities of national water authorities, and regional or river basin organizations.
  - (iii) Weak policy framework for sustainable development of national water resources.
  - (iv) Poor information acquisition, management and dissemination systems.
  - (v) Low levels of awareness, education and training with respect to economic, social, environmental and political issues related to water resources development and management.

---

<sup>1</sup> The word "Management" in "Water Resources Management" includes the developmental aspects of water resources. This definition is in line with that of the SADC Protocol on Shared Watercourses, and it is also consistent with the definition adopted by African Development Bank and Global Water Partnership (GWP). As a way of emphasising the importance of development in the SADC region, the word "development" is also used together with the word "management"

- (vi) Lack of effective public participation by all stakeholders particularly women and the poor.
  - (vii) Infrastructure is inadequate and unable to meet the growing demands for service.
4. These issues are being addressed through a number of programmes and projects that form part of the Regional Strategic Action Plan for Integrated Water Resources Development and Management in the SADC Countries (RSAP-IWRM) which is now a component of the Regional Indicative Strategic Development Plan (RISDP). The RSAP is implemented by the SADC Secretariat through the Directorate of Infrastructure and Services' Water Division (DIS-WD). However, water resources development in the region still faces many challenges including the following:
- i) **Mismatch between water availability and demand.** Areas of highest water demand happen to be in the water scarce semi-arid zones of the region. This poses a challenge in terms of the allocation of available water resources to various users, particularly with respect to transboundary water resources.
  - ii) **High variability of available water resources,** which impacts on reliability. Investments in storage dams, inter-basin transfers and large scale water distribution networks are needed to ensure water security for multi-purpose uses under varying climatic and hydrological conditions.
  - iii) **Shared watercourses** which cut across political jurisdictions and cover several countries with different socio-economic conditions and complex water rights serve as a potential source of conflict unless managed in a coordinated, integrated and equitable manner. At the same time, shared watercourses serve as potential sources of regional cooperation and economic integration.
  - iv) **Widespread poverty** in the region. UN and World Bank studies indicate that a number of SADC countries have the lowest human development indices in the world; it is estimated that about 70% of the population in the region lives below the international poverty line of US\$2 per day.
  - v) **Weak inter-sectoral linkages and coordination,** which hampers comprehensive and integrated development.
  - vi) **Low access to safe drinking water and adequate sanitation,** primarily as a result of inadequate infrastructure, and poor operation and maintenance of facilities.
  - vii) **Weak policy linkages at regional and national levels,** particularly weak implementation mechanisms at national level, such that plans at regional level do not have an effective impact at national level.
  - viii) **Sharing benefits of water allocation,** between Watercourse States, taking account of historically uneven development of water resources requiring joint assessment, planning and understanding of resource availability and utilisation.
  - ix) **Poorly developed formal dispute resolution mechanisms,** particularly the delay in the establishment of the SADC Tribunal.
  - x) **The prevalence of HIV/AIDS,** with the associated challenges for the capacity, sensitivity and requirements to water resources management in the region.

5. This document presents the Regional Water Policy for the SADC region which is aimed at providing a framework for sustainable, integrated and coordinated development, utilization, protection and control of national and transboundary water resources in the SADC region, for the promotion of socio-economic development and regional integration and improvement of the quality of life of all people in the region. The policy was formulated through a highly participatory and consultative process, implemented over a period of about 12 months, involving diverse stakeholders including senior government officials from ministries dealing with economics, law, water resources, agriculture, energy, and environment. Other stakeholders included academic and research institutions, private companies, consultants in various disciplines, as well as representatives of local and regional NGOs, and community leaders.

### **Policy Principles**

6. The policy framework for the regional water policy is anchored by the following pronouncements which SADC Member States have formulated over the years:
  - SADC Declaration and Treaty (Declaration by the Heads of State or Government of Southern African States “Towards the Southern African Development Community” “*Towards the Southern African Development Community*” adopted in Windhoek, Namibia, on 17 August 1992, and the Treaty of the Southern African Development Community, which entered into force on 30 September 1993) . The original Declaration calls upon all countries and people of Southern Africa to develop a *vision of a shared future, a future within a regional community* that will ensure economic well-being, improvement of the standards of living and quality of life, freedom and social justice and peace and security for the peoples of Southern Africa.
  - The Southern African Vision for Water, Life and Environment adopted in March 2000, aimed at “*equitable and sustainable utilisation of water for social and environmental justice, regional integration and economic benefit for present and future generations*”. Water is therefore seen as a driving force to a better future for the peoples of Southern Africa.
  - The Revised SADC Protocol on Shared Watercourses, which entered into force in September 2003, whose overall objective is “*to foster closer cooperation for judicious, sustainable and coordinated management, protection and utilisation of shared watercourses and advance the SADC agenda of regional integration and poverty reduction*”.
  - The “Dublin Principles” of integrated water resources management (IWRM) (enunciated in the 1992 Dublin Statement on Water and Sustainable Development promulgated by the International Council of Water and Development) commonly accepted as representing best water resources management practice.

7. The Policy Principles for Water Resources Management for the SADC region, taking into account the above policy pronouncements, are as follows:
- Recognition of water as an instrument for peace, cooperation and regional integration
  - Effective public consultation and involvement of users.
  - Focus on integrated, people-centred planning.
  - Further development of SADC water resources through the joint planning and construction of strategic water infrastructure, in order to rectify historical imbalances and promote water supply for irrigation and poor communities.
  - Efficient use of water through demand management, conservation and re-use, and the efficient use of water for agriculture.
  - Recognition of the environment as a legitimate user of water, as well as a resource base.
  - The protection of the environment through appropriate user charges and the enforcement of “the polluter pays” principle, taking into account equity and social justice.
  - Integration of water supply, sanitation and health and hygiene education programmes.
  - Capacity building to ensure that managers of water, waste and sanitation have the requisite knowledge and tools.
  - Ensuring that waste is safely managed close to the point of generation.
  - Preventing the export (and import) of harmful waste across the national and regional boundaries.
  - Gender mainstreaming and addressing HIV/AIDS in water resources management at all levels.

### **Policy Structure**

8. The policy has nine thematic areas which address the water resources management issues and challenges outlined in paragraphs 3 and 4, or are aimed at optimising the development opportunities. The main policy areas are:
- a) **Regional Cooperation in Water Resources Management:** including policy provisions on water for regional integration and socio-economic development; cooperation in water resources management of shared watercourses; inter-sectoral and international cooperation; and the harmonisation of national policies and legislation.
  - b) **Water for Development and Poverty Reduction:** containing policy provisions on water for basic human needs and for industrial development; water for food and energy security.

- c) **Water for Environmental Sustainability:** containing policy provisions on water and the environment, water quality management, and control of alien invasive species in watercourses.
- d) **Security from Water-related Disasters:** including policy provisions covering people's protection from water related disasters; disaster prediction, and management and mitigation.
- e) **Water Resources Information and Management:** covering data and information acquisition and management; and information sharing.
- f) **Water Resources Development and Management:** including policy provisions on a river basin approach; integrated planning; dams and dam management; water demand management; and alternative sources of water
- g) **Regional Water Resources Institutional Framework:** including policy provisions covering institutional arrangements at regional and national levels and for Shared Watercourse Institutions (SWCIs).
- h) **Stakeholder Participation and Capacity Building:** including provisions focusing on participation and awareness creation; capacity building and training; gender mainstreaming; and research, technology development and transfer.
- i) **Financing integrated water resources management in the region.**

## **Policy Statements**

9. Based on the above policy structure, and guided by the policy principles already outlined, the policy statements are grouped under each thematic area and sub-theme. The policy statements are stated below:

### **(a) Regional Cooperation in Water Resources Management.**

#### Water for Economic Integration

- (i) Water resources shall be developed and managed in an integrated manner to contribute to regional and national economic integration and development on the basis of balance, equity and mutual benefit for all Member States
- (ii) The Southern African Vision for Water, Life and the Environment shall be the reference point for the water resources contribution to achieving regional integration, development and poverty eradication

#### Water for Peace

- (i) Regional Cooperation in shared watercourses shall be guided by the Revised SADC Protocol on Shared Watercourses.
- (ii) Watercourse States shall participate and co-operate in the planning, development, management, utilization and protection of water resources in the shared watercourses
- (iii) Member States shall endeavour to promote and exploit opportunities for joint water resources development in shared watercourses to consolidate regional cooperation.

#### Water and Inter-Sectoral Cooperation

The SADC Secretariat, Member States and Watercourse Institutions shall ensure the collaboration of all affected sectors in the management

of water resources to achieve the goals of regional integration, development, equity, poverty eradication and sustainability.

#### Harmonisation of National Policy and Legislation

- (i) Member States shall promote the harmonisation of their water policies and legislation with the regional water policy.
- (ii) National water policy and legislation shall take into account any international and regional conventions, protocols and policies accepted and/or already adopted by the Member States.

#### Conflict Management

- (i) Member States shall pursue all avenues of amicable prevention and resolution of conflicts, in accordance with the principles enshrined in the SADC Treaty
- (ii) Where amicable resolution cannot be achieved, conciliation, mediation and arbitration mechanisms should be pursued, with use of the SADC Tribunal or other recognised international arbitration structures only as the last resort

#### Water for International Cooperation

SADC shall actively participate in and support other African Initiatives, as well as creating relationships with international initiatives on water resources management

### **(b) Water for Development and Poverty Reduction.**

#### Water for Socio-Economic Development

- (i) Water shall be considered as an economic good, which supports cross-sectoral regional economic integration and development, and shall be conserved, developed and managed to provide economic benefits.
- (ii) Water shall be considered as a social good that is essential to human dignity, poverty reduction and social well-being.
- (iii) Water allocation between Member States, sectors and users shall consider among other things the economic benefits balanced with social obligation and environmental requirements
- (iv) Regional water resources management shall consider the concept of comparative advantage in water availability as a means of promoting intra-regional trade and balancing national water budgets in a sustainable manner.

#### Water Supply, Sanitation and Hygiene

- (i) Member States have a social and economic responsibility to ensure sustainable access to safe water supply for basic human needs in their respective countries.
- (ii) Member States will prioritise the allocation, access and utilisation of water resources for basic human needs over any other allocation, access and utilisation.
- (iii) Member States will seek to provide, in addition to clean water for domestic use, water for productive activities to poor and marginalised communities in rural and peri-urban areas in order to alleviate poverty and to correct imbalances in development.

- (iv) To ensure sustainability of water supply services to all areas, cost recovery will underpin all infrastructural developments and operations, i.e. beneficiaries will pay an appropriate amount towards the cost of providing services taking into account Member States' social responsibilities to the poor.
- (v) Member States will facilitate the provision of sustainable access to adequate sanitation for all rural, peri-urban and urban households.
- (vi) Member States will ensure that provision of sanitation services is integrated into the provision of water supply for basic human needs.
- (vii) Public awareness, as well as hygiene education and practice should be integrated in the provision, operation and maintenance of water and sanitation facilities.

#### Water for Food Security

- (i) Member States will promote the attainment of regional food security rather than national self-sufficiency by developing those areas which have comparative advantage for rain-fed and irrigated agriculture.
- (ii) Water resources development for irrigation in commercial agriculture should be planned in coordination with other sectors in the interest of IWRM.
- (iii) As a vehicle for promoting reliable food production and enhancing food security, sustainable irrigated agriculture will be promoted in all Member States with suitable water and land resources.
- (iv) Member States will promote improved tillage and rainwater harvesting techniques to optimise the use of water by rain-fed agriculture.
- (v) Member States will 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 will promote 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) Water requirements for livestock watering and for maintenance of grazing land shall receive adequate consideration in water resources allocations and management at regional as well as national and local levels.

#### Water for Energy Development

- (i) Member States will optimise the use of hydro-electricity generation potential so as to provide cheaper and more environmentally friendly sources of electrical energy to the region.
- (ii) Member States will encourage the use of more efficient technologies in cooling of industrial processes and electric power generation stations.
- (iii) Member States will encourage the development of small-scale hydropower to service energy needs of rural communities.

#### Water for Industrial Development

Member States may allocate water for industrial requirements at the economic value of the resource.

### Water for Sports and Recreation

Water resources allocation at national and regional levels shall consider allocating water for Sport and Recreation

### **(c) Water for Environmental Sustainability.**

#### Water and the Environment

- (i) The environment is recognised as a resource base and a legitimate user of water in the SADC region and Member States should take all necessary measures to sustain it.
- (ii) Member States should, in their mechanisms for allocating water resources among many users, allocate sufficient water to maintain ecosystem integrity and biodiversity including marine and estuarine life.

#### Water Quality Management

- (i) SADC should harmonise and uphold common minimum standards of water quality in shared watercourses.
- (ii) Member States should individually and collectively adopt the necessary measures to prevent and control pollution (point and non-point sources) of ground and surface waters resulting from inland, coastal or offshore activities.
- (iii) Member States shall not import pollutants into the region for disposal which can affect watercourses.
- (iv) EIA should be a mandatory requirement for development initiatives in the watercourses and Member States are encouraged to undertake Strategic Environmental Assessments where feasible.

#### Alien Invasive Species

Member States are individually and collectively responsible for the control of alien invasive species with the ultimate aim of eradication of the non-economical ones.

### **(d) Security from Water-related Disasters**

#### People's Protection from Floods and Droughts

- (i) Member States shall commit themselves towards the protection of human life, common property and the environment against the effects of water related natural and human-induced disasters.
- (ii) The SADC Secretariat and SWCIs shall facilitate and coordinate the management of natural disasters at a shared watercourse and regional level.

#### Disaster Prediction, Planning and Mitigation

- (i) The SADC Secretariat, Member States and SWCIs are committed to improving the region's capacity in predicting water-related disasters associated with floods and droughts through coherent and effective regional and watercourse strategies.
- (ii) Management of natural disasters and emergency situations requires development and implementation of integrated and coherent regional and watercourse level management plans and procedures.

- (iii) Regional disaster management planning shall be aligned with other sector disaster management plans and involve consultation with relevant stakeholders.
- (iv) Each Member State has an obligation to notify and share information with affected Watercourse States in the event of actual or pending water related disasters.

**(e) Water Resources Information and Management.**

Data and Information Acquisition and Management

- (i) Member States shall establish water resources data and information acquisition and management systems in their territories in an integrated manner at regional, river basin and national levels to meet all water resources management needs.
- (ii) Member States shall adopt compatible systems for data and information acquisition and management.

Information Sharing

- (i) Member States shall timeously share relevant available information and data regarding the hydrological, hydro-geological, water quality, meteorological and environmental condition of shared watercourses.
- (ii) Member States shall ensure that members of the public in the region have access to relevant and understandable information regarding water resources impacting on their health or safety and on economic interests.
- (iii) SADC, SWCIs as well as Member States shall establish mechanisms for regular interpretation and dissemination of essential information on water resources so that the public is regularly informed.

Water Resources Assessment

Member States shall adopt common or compatible procedures and methodologies for carrying out regular water resources assessment at regional, river basin and national levels.

**(f) Water Resources Development and Management.**

River Basin Approach

- (i) Member States will adopt a river basin or watercourse approach in the planning, development and management of water resources. This applies in particular to shared watercourses.
- (ii) Watercourse States will prepare and implement river basin development plans in a holistic and integrated manner, with the involvement of stakeholders to achieve equitable and efficient utilisation.
- (iii) The planning, development and management of watercourses, particularly in shared watercourses will consider the integrated use of surface and ground water resources, the reuse of water, proper pollution management and the provision of environmental requirements.

- (iv) Water resources allocation and utilisation will be based on equitable and reasonable mechanisms through negotiations between watercourse States.
- (v) Member States will ensure that major water uses in watercourses, particularly in shared watercourses will be regulated through authorisations such as a system of permits.

#### Integrated Planning

- (i) Planning, development and management of water resources in the region should be based on the principles of IWRM and shall take full cognisance of the cross-cutting nature of water.
- (ii) Watercourse States shall promote joint planning and implementation of water resources developments within their shared watercourse and transparently notify and/ or engage other Watercourse States in a dialogue, where such States are not proponents of the project.

#### Water Demand Management

- (i) When planning the development of water infrastructure and services, Member States or river basin organisations shall aim to utilise existing capacities more efficiently as part of the process of augmenting water supply.
- (ii) Water Demand Management (WDM) will be pursued by Member States as a fundamental requirement for integrated planning and management of water resources, particularly in shared watercourses.

#### Alternative Sources of Water

Member States will promote rainwater harvesting and alternative sources of water such as desalination, reuse of water, recycling and reclamation. Relevant research in this regard should be promoted as and where appropriate.

#### Dam Development and Management

- (i) Integrated planning, development and management of dams will be promoted so as to optimise the use of the water resources, maximise derived benefits (such as hydropower, tourism, flood control, irrigation, water supply) and take both positive and negative externalities into account.
- (ii) SADC shall encourage the participation of all stakeholders in decision-making processes for dam development and, where appropriate, with adequate facilitation and empowerment of vulnerable groups to ensure their effective involvement in decision-making.
- (iii) Watercourse States will negotiate on operating rules for dams on shared watercourses so as to optimise the socio-economic and environmental benefits in an equitable manner.

#### Affected Communities

- (i) Watercourse States shall promote the development and implementation of water infrastructure projects through a participatory process, especially of affected communities.

- (ii) Member States will put in place proper legislation to ensure/provide for compensation and resettlement of affected communities, so that they will not be worse off as a result of the project.

**(g) Regional Water Resources Institutional Framework.**

SADC Secretariat

- (i) The SADC Secretariat is responsible for promoting and coordinating the implementation of the Regional Water Policy and Strategy and Protocols for the Water Sector in cooperation with other sectors such as health, energy, agriculture, tourism and environment.
- (ii) The SADC Secretariat is responsible for supporting SWCIs and assessing their compliance with and implementation of the Revised Protocol.
- (iii) The SADC Secretariat is accountable to the Member States through the Council of Ministers and shall ensure direct coordination with National Water Departments.

Shared Watercourse Institutions (SWCIs)

- (i) Appropriate SWCIs shall be negotiated in all shared watercourses by agreement between the Watercourse States.
- (ii) A Watercourse Commission shall be established on each shared watercourse to advise and coordinate the sustainable development and equitable utilisation of the associated water resources for mutual benefit and integration.
- (iii) The development of Watercourse Commissions may be phased to enable gradual development of cooperative arrangements and capacity requirements.
- (iv) Watercourse Commissions must efficiently and effectively fulfil the institution's responsibilities considering sustainability.
- (v) Watercourse States are encouraged to jointly plan the development of water resources through Watercourse Commissions and to undertake the development and operation of joint water resources infrastructure on behalf of two or more countries for mutual benefit through Water Authorities or Boards.
- (vi) Policy and strategy level decision making within SWCIs should be through consensus between Watercourse States.
- (vii) All SWCIs must enable the SADC Secretariat to fulfil its coordination and guidance responsibilities in terms of the Regional Policy and Strategy and the (Revised) Protocol on Shared Watercourses.
- (viii) Stakeholder participation in decision making shall primarily be through Member States' government representatives, while any SWCI shall ensure stakeholder consultation at a joint project level.
- (ix) In the interests of IWRM, SWCIs are encouraged to foster cooperative relationships with non-governmental and civil society groupings within the shared watercourse.

Institutional Arrangements at National Levels

- (i) Member States have an obligation to create an enabling institutional environment for the effective management of shared watercourses in line with the Revised Protocol and the Regional Policy and Strategy.

- (ii) Member States are encouraged to decentralise the management of water and the associated authority to the lowest appropriate level, while maintaining appropriate institutional arrangements for the management of shared watercourses.
- (iii) Member States shall develop and implement appropriate institutional arrangements to enhance the participation of NGOs in planning and management of water resources at national and community levels.

#### Monitoring and Evaluation

The SADC Water Sector's achievement of its development goals, objectives, strategies, programmes and institutional performance should be assessed through a coherent, transparent and independent monitoring and evaluation system.

#### **(h) Stakeholder Participation and Capacity.**

##### Participation and Capacity Development

- (i) Water resources development and management at all levels shall be based on a participatory approach, with effective involvement of all stakeholders.
- (ii) All stakeholders shall be empowered to effectively participate in the management of water resources at regional, river basin, national and community levels, particularly in shared watercourses.
- (iii) Member States and SWCIs shall recognize the positive role played by NGOs in water resources management particularly at community level, and shall facilitate their participation in water development and management activities.

##### Gender Mainstreaming

- (i) Women are recognised as playing a central role in the provision, management and safeguarding of water and shall be fully involved in the development and implementation of policies, processes and activities at all levels.
- (ii) All SADC Water Institutions shall implement the principles, goals and objectives of gender mainstreaming in their administration and implementation.

##### Capacity Building and Training

- (i) All water institutions in the region at various levels shall make all efforts to develop and share capacity to carry out their mandate efficiently and effectively.
- (ii) IWRM and regional integration shall be promoted in water sector education and training.

##### Research, Technology Development and Transfer

- (i) A regional perspective for effective and efficient demand-driven water sector research and technology development shall be adopted in the region.
- (ii) Notwithstanding considerations of national sovereignty, Member States shall share appropriate water technology and information as a means of building capacity and integration.

**(i) Financing Integrated Water Resources Development and Management in the Region.**

Financial Sustainability

- (i) Member States shall ensure adequate financial resources for national as well as regional projects for water resources development and management.
- (ii) For water resources development and management at national and regional level to be financially sustainable, Member States as well as SWCIs shall strive to recover all costs for managing the resources considering the special requirements of the poor and the vulnerable in society.

Cost Reduction

Member States shall institute planning and operational systems to facilitate cost reduction in the management of water resources.

Public-Private Partnerships

- (i) The SADC Secretariat, SWCIs and Member States should actively develop partnerships with funding agencies, non-governmental organisations and private sector bodies to support the development and management of water resources in the region.
- (ii) Partnerships between SWCIs or governments and private sector should be considered where these could contribute to efficient management of resources and delivery of services, as well as higher inflow of investment capital to the sector.
- (iii) SADC shall continue to actively engage donor agencies to finance water development and management in the region.

**Implementation of Regional Water Policy**

- 10. The Regional Water Policy will be implemented through a Regional Water Strategy. An important vehicle for implementing the policy is the existence of well functioning River Basin Organisations established particularly on shared watercourses, operating under sound legislation, and systems for planning and stakeholder involvement, and embracing the IWRM principles.
- 11. In order for the Regional Water Policy to be implemented at national level, Member States would need to harmonise their policies with this Regional Water Policy.
- 12. It is also fundamentally important that there should be closer coordination of the Regional Water Policy with other sectoral policies in the SADC, especially the major water use sectors including, trade, agriculture, energy and environment. Inter-sectoral coordination at SADC level would be an important building block for integrated water resources development and management which is the basis for sustainable development.

**PART ONE - BACKGROUND TO POLICY**

## 1. POLICY CONTEXT

### 1.1 Water, the Engine of Regional Growth

1.1.1 Water in the SADC region is potentially the engine of regional economic and social development. The goal of SADC - “*the attainment of an integrated regional economy on the basis of balance, equity and mutual benefit for all Member States*”, with three key SADC objectives – poverty reduction, food security, and industrial development – can best be achieved through development and management of the water resources of the SADC region. Increased food production through better management of rain-fed and irrigated agriculture, aquaculture, and livestock production; improving access and availability of cheap energy through hydropower; increasing access to sustainable water supplies for domestic and industrial requirements, and for sanitation and waste management, all will require the development and effective management of the region’s water resources. In addition, there will be a demand for water to sustain biodiversity and natural ecosystems, including wetlands, which are the basis for rural livelihoods and for tourism. The SADC region will also need to manage its water resources to provide improved security from severe floods and droughts. Ultimately, the SADC region’s water resources will have to be developed and managed in an integrated and sustainable manner for the region to achieve the African Water Vision as well as the Millennium Development Goals with respect to access to water supply and sanitation, and food production and energy,

1.1.2 Coordinated and sustainable integrated development and management of water resources in the SADC region is important for regional peace and integration. Water is a shared resource in the region. Thus the coordinated sustainable development, utilization, protection and control of national and transboundary water resources in the SADC region is not only important for promoting socio-economic development but would also contribute towards regional integration, peace and security. SADC therefore intends to use water as an instrument for promoting peace and cooperation among Member States.

### 1.2 Policy Principles

1.2.1 The principles followed in the regional water policy presented in this document are based on:

- The SADC Declaration and Treaty (Declaration by the Heads of State or Government of Southern African States “*Towards the Southern African Development Community*”, adopted in Windhoek, Namibia, on 17 August 1992; and the Treaty of the Southern African Development Community, which entered into force on 30 September 1993), which in the original declaration calls upon all countries and people of Southern Africa to develop a *vision of a shared future, a future within a regional community* that will ensure economic well-being, improvement of the standards of living and quality of life, freedom and social justice and peace and security for the peoples of Southern Africa. The common vision of SADC is further

#### Box 1. Water Vision Statements

- Equitable and Sustainable Social and Economic Development in Southern Africa
- Equitable Access to Water of an Acceptable Quantity and Quality
- Proper Sanitation for All and Safe Waste Disposal
- Food Security for all Households
- Energy Security for All Households
- A Sustainable Environment
- Security from Natural Disasters
- Integrated Water Resources Development and Management

elaborated in the SADC Common Agenda which includes, among its policies, the promotion of sustainable utilisation of natural resources.

- The Southern African Vision for Water, Life and Environment (herein sometimes called the "Southern African Water Vision") adopted in March 2000, which promotes "*equitable and sustainable utilisation of water for social and environmental justice, regional integration and economic benefit for present and future generations*". Water is therefore seen as a driving force to a better future for the people of Southern Africa. The Vision is further elaborated into eight sub-divisions with respect to key sectors (see Box 1).

- The Revised SADC Protocol on Shared Watercourses, which entered into force in September 2003, whose overall objective is "*to foster closer cooperation for judicious, sustainable and coordinated management, protection and utilisation of shared watercourses and advance the SADC agenda of regional integration and poverty reduction*", contains principles and provisions for water resources management in the region.

- The Dublin Principles for integrated water resources management (IWRM) (enunciated in the 1992 Dublin Statement on Water and Sustainable Development promulgated by the International Council of Water and Development) are commonly accepted as representing best water management practice (see Box 2). In addition, a widely accepted definition of IWRM is provided by the Global Water Partnership (GWP), which states that it is "*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 a equitable manner without compromising the sustainability of vital ecosystems*".

#### Box 2. Dublin Principles of IWRM

1. Fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment.
2. Water development and management should be based on a participatory approach, involving users, planners and policy-makers at all levels.
3. Women play a central part in the provision, management and safeguarding of water.
4. Water has an economic value in all its competing uses and should be recognised as an economic good.

1.2.2 The policy is being formulated following the adoption of the Millennium Development Goals (MDG) and World Summit on Sustainable Development (WSSD) targets to which all SADC Member States are formally committed. The MDG and WSSD water-related targets of increasing access to water and sanitation, reduction of poverty, increasing food security and improving environmental sustainability all have a significant impact on water resources management at national and regional level. In addition, the SADC Member States subscribe to the vision and goal of the New Partnership for African Development (NEPAD), an African development initiative conceived by African leaders, aimed at socio-economic development and poverty reduction on the African continent. This is to be achieved, through integrated development of key sectors including agriculture, infrastructure (including transport, and water resources), human resources, economic and corporate governance, and regional integration. Therefore the SADC Regional Water Policy should guide SADC to achieve the MDG and NEPAD development goals and objectives.

1.2.3 A number of bilateral and multilateral agreements have been completed between Watercourse States within SADC over the past decade. Together these have further developed the legal framework of the Protocol on Shared Watercourses and the principles and spirit of cooperation enshrined in these Agreements have been captured in this Policy. The UN Convention on Non Navigational Uses of Water (adopted 1997) has also been recognised.

1.2.4 For the SADC region the policy principles for water resources management, taking into account the above policy pronouncements, are as follows: -

- Recognition of water as an instrument for peace, cooperation and regional integration
- Effective public consultation and involvement of users.
- Focus on integrated, people-centred planning.
- Further development of SADC water resources through the joint planning and development of strategic water infrastructure in order to rectify historical imbalances and promote water supply for irrigation and poor communities.
- Efficient use of water through demand management, conservation and re-use, and the efficient use of water for agriculture.
- Recognition of the environment as a legitimate user of water as well as a resource base.
- The protection of the environment through appropriate user charges and the enforcement of “the polluter pays” principle, taking into account equity and social justice.
- Integration of water supply, sanitation and health and hygiene education programmes.
- Capacity building to ensure that managers of water, waste and sanitation have the requisite knowledge and tools.
- Ensuring that waste is safely managed close to the point of generation.
- Preventing the export (and import) of harmful waste across the national and regional boundaries.
- Gender mainstreaming and addressing HIV/AIDS in water resources management.

### **1.3 Purpose of the Document**

1.3.1 The purpose of this document is to present the Regional Water Policy for the SADC region so as to provide a framework for sustainable, integrated and coordinated development, utilization, protection and control of national and transboundary water resources in the SADC region. The regional water policy is aimed at promoting socio-economic development and regional integration and improving the quality of life of all people in the region.

1.3.2 The Regional Water Policy provides the context and intent for water resources management at a SADC regional level, representing the aspirations and interests of Member States. The Protocol on Shared Watercourses is the legal instrument for its implementation, under which bilateral and multilateral agreements between Watercourse States may be developed. The Regional Water Strategy will then represent the framework for implementation of the Policy and Protocol, indicating actions, responsibilities and timeframes.

1.3.3 The policy framework is a tool for policy makers at regional and national levels. As such it will specifically:

- Inform and give guidance to the SADC Water Division, in particular, and other sectors in general in coordinating the development of the water sector in the SADC region.
- Inform and give guidance to SWCIs and Member States in the management of shared watercourses.
- Give guidance for harmonising national water policies and management of water resources in Member States.
- Give guidance for implementing water resources activities by all stakeholders (private sector, NGOs and civil society) and other interested parties such as cooperating partners

## **2. WATER RESOURCES MANAGEMENT CHALLENGES AND OPPORTUNITIES**

### **2.1 Water Resources in the SADC Region**

2.1.1 Water resources (surface water, groundwater, and rainfall) are unevenly distributed in time and space in the SADC region. Geographically, the region covers an extensive area of approximately 9.3 million square kilometres between latitudes 5° N to 35° S and longitudes 10° to 40° E. There is tremendous variability in climate across the region, which in turn significantly affects the availability of water resources. Average annual rainfall varies from 4,000mm in the north to less than 50mm in south-western parts of the region. The region includes the equatorial rain forests of the Democratic Republic of the Congo, and deserts in Namibia and Botswana. A large part of the region is semi-arid. Surface runoff is higher in the northern parts of the region and most rivers are perennial; but surface runoff is lowest in the southern and western parts of the region, and many rivers are ephemeral. The region is prone to extreme meteorological events. Severe droughts have covered the region frequently over the last two decades, and extreme floods hit the region in two consecutive years, 2000 and 2001, and affected particularly Mozambique and Malawi.

2.1.2 SADC is a region of shared water resources. It is estimated that about 70% of the water resources in the SADC region are shared by more than one country. There are 15 major river basins which are transboundary or watercourses shared by two or more countries (see Figure 1). They range from the large Congo River Basin (3,800,000 square kilometres) to Umbeluzi River Basin (5,500 square kilometres). The Zambezi River Basin (1,400,000 square kilometres), covers eight SADC Member States. Even the small Umbeluzi River is shared by Mozambique and Swaziland. Thus one of the characteristic features in the region, is shared watercourse systems, with complex water rights and potential conflicts over utilization of the shared resources. This common heritage also presents tremendous opportunities for cooperation in managing the shared resources for regional economic development and regional integration.

2.1.3 On a regional basis the average renewable freshwater resources (ground and surface water) of the SADC region are enormous. With a population of approximately 200 million (year 2000 SADC estimate), per capita annual renewable freshwater resources average 8,900 cubic metres (equivalent to about 24,000 litres/person/day). However, this seemingly favourable water situation masks tremendous seasonal, annual and spatial variability. In addition, water is generally not available in places of highest water demand. For example, there are abundant water resources in the northern parts of the region (including the DRC, northern parts of Zambia and Angola); but these are also areas of least water demand at present. Highest water demands are in the southern and south-western parts of the region (northern parts of South Africa, and most of Namibia and Botswana). This high variability in availability of water resources has led to localized deficits in water. Projections of population, water demand, and water development indicate that by 2025 six SADC countries will experience water quality and quantity problems in the dry season, three countries will experience “water stress” and at least two countries (Malawi and South Africa) will experience “absolute scarcity”.

2.1.4 Other characteristics of the water sector in SADC include: low coverage of urban and rural water supply and sanitation services, leading to high incidence of water-borne diseases; rapidly growing and urbanizing populations, leading to growing water scarcity and

increasing water pollution; generally very low water-use efficiency in irrigated agriculture; degraded watersheds and deteriorating water quality; and the increasing importance of hydropower to the regional economy.

**Figure 1: Main International River basins in the SADC Region**



## 2.2 Key Issues

2.2.1 In the early 1990s the SADC secretariat coordinated the preparation of the action plan for integrated development and management of water resources in SADC. The **Regional Strategic Action Plan for Integrated Water Resources Development and Management in the SADC Countries (1999 - 2004)** was formally approved by SADC Heads of States in September 1998. The review and analysis of the water sector, done in preparation of the Plan, identified key issues or constraints to effective development of the water sector. These are:

- (i) A weak legal and regulatory framework.
- (ii) Inadequate institutional capacities of national water authorities, and regional or river basin organizations.
- (iii) Weak policy framework for sustainable development of national water resources.
- (iv) Poor information acquisition, management and dissemination systems.
- (v) Low levels of awareness, education and training with respect to economic, social, environmental and political issues regarding water resources development and management.
- (vi) Lack of effective public participation by all stakeholders particularly women and disadvantaged groups.
- (vii) Infrastructure that is inadequate and unable to meet the growing demands for service.

2.2.2 In the light of the above constraints, the RSAP-IWRM has the following strategic interventions to address these mainly institutional issues:

- improving the legal and regulatory framework at national and regional levels;
- improving national and transboundary river basin management, planning and coordination;
- strengthening linkages among macro-economic, social and environmental policies;
- improving information acquisition, management, and dissemination;
- supporting awareness building, education and training;
- promoting public participation; and
- investing in infrastructure.

A number of projects and interventions are currently being implemented with financial support from several cooperating partners. One of the programmes involves the establishment of a regional policy framework for integrated water resources development and management in SADC.

2.2.3 In addition to the above institutional issues, which RSAP is addressing, the other water resources management issues in the region include:

- i) **Water availability and demand** are not matched. The region has areas of water scarcity and areas of abundance. The challenge is equitable allocation of available water resources to various users, particularly with respect to transboundary water resources. In this context consideration should be given to the concept of sharing benefits of water resources development through a negotiated process.
- ii) **High variability of available water resources**, which impacts on reliability. There is a need for regulating the variable flows so as to secure reliable supplies under varying climatic and hydrological conditions. The construction of storage dams, inter-basin transfers and large scale water distribution networks has to be seen in this

light. Furthermore, coordinated management of the regional impacts of floods and droughts is required.

- iii) **Shared watercourses** which cut across political jurisdictions and cover several countries with different socio-economic conditions and complex water rights are a source of conflict unless managed in a coordinated, integrated and equitable manner. This must also acknowledge the shared watercourses with non-SADC States, which requires flexibility in institutional arrangements.
- iv) **Widespread poverty** in the region. UN and World Bank studies indicate that a number of SADC countries have the lowest human development indices. Available statistics indicate that about 70% of the population in the region lives below the international poverty line of US\$2 per day. Poverty in the region may further be exacerbated by the impact of the HIV/AIDS, which has reached pandemic proportions in some of the Member States, and is imposing severe burdens on the social, economic and health sectors.
- v) **Weak inter-sectoral linkages and coordination**, which hampers comprehensive and integrated development.
- vi) **Low access to safe drinking water and adequate sanitation**, primarily as a result of inadequate infrastructure; and poor operation and maintenance of facilities has contributed to unsustainability of services.
- vii) **Weak policy linkages at regional and national levels**, particularly weak implementation and monitoring mechanisms at national level, such that plans at regional level do not have an effective impact at national level.
- viii) **Sharing benefits of water allocation** between watercourse States, taking account of historically uneven development of water resources requiring joint assessment, planning and understanding of resource availability and utilisation.
- ix) **Poorly developed formal dispute resolution mechanisms**, particularly the delay in establishment of the SADC Tribunal.
- x) **The prevalence of HIV/AIDS**, with the associated challenges for the capacity, sensitivity and requirements posed in respect of water resources management in the region.
- xi) **Limited Capacity to implement compliance and monitoring of the International Agreements**

2.2.4 In spite of the above issues, water resources management presents tremendous opportunities for socio-economic development of the region. These include:

- Abundance of overall water resources presents opportunities for the development of agriculture, renewable energy sources, water supplies for domestic and industrial water requirements, and tourism. Rather than focussing on allocation of water resources, it is important to consider the sharing of benefits of water resources development and management through negotiation.
- The shared water resources present opportunity for integrated development, regional cooperation and peace and security.
- Poverty reduction can be addressed more effectively on the basis of a multi-sectoral approach; hence the need to move concertedly towards IWRM at national and regional levels.
- The SADC Treaty and the SADC Common Agenda has already provided an overall policy framework for developing the shared resources of the region. The RISDP provides a comprehensive and multi-sectoral framework for addressing socio-economic development in the region.

2.2.5 The HIV/AIDS pandemic in the region is now recognised as the single greatest developmental and public health concern. It is a cross-cutting issue which impacts all sectors including the water sector; but it is also impacted on by the water sector. It is acknowledged that HIV/AIDS decreases the productive capacity of all sectors, including the water sector, due to mortality and morbidity of the economically active population; therefore it has demonstrable adverse impacts on the institutional capacities for water resources management. It also has physical impacts on the environment; for example, the expanding cemeteries around large urban centres are degrading the environment and impacting water quality. Therefore the Regional Water Policy will promote activities to mitigate the impact of HIV/AIDS, such as improving access to reliable water supply and sanitation, increasing food security. As well, the water sector will collaborate with the health sector, in particular with regard to public awareness and information campaigns to address this paramount health concern.

### **2.3 Rationale for Regional Water Policy**

2.3.1 SADC requires a comprehensive policy framework to guide the management of water resources. At present there is no long-term policy and strategy for the development and management of the region's water resources, and in particular the management of transboundary watercourse systems. The *Revised SADC Protocol on Shared Watercourses* and the *Southern African Vision for Water, Life and the Environment*, together with its eight sub-visions need to be supported by a comprehensive policy framework.

2.3.2 There are a number water related policy statements scattered in various SADC documents, either of the Water Division or other related sectors (e.g., energy, agriculture, health). These policies were not developed in a coordinated manner, and, in some respects there are gaps or overlaps. There is a need to consolidate policy provisions on water into one single document. It is equally important to establish inter-sectoral coordination on water related management issues at regional<sup>2</sup>, river basin and national levels. This would facilitate the integration of water, land and other sectors in order to achieve the effective management of water resources for the ultimate goal of regional integration and poverty eradication.

2.3.3 SADC has embarked on the implementation of the RISDP with the aim of achieving regional integration and poverty eradication. Furthermore, SADC Member States are committed to the achievement of the Millennium Development Goals, which particularly call for improvement in access to sustainable water supply, food security, and energy security. Water resources management, being a cross-cutting and multi-sectoral issue has a vital role to play in these global as well as national initiatives. This can only be effectively carried out within a more comprehensive policy framework

---

<sup>2</sup> In this document, unless otherwise defined the term "region" refers to the entire SADC region and not to geographical areas within a single country.

## 2.4 Policy Formulation Process

2.4.1 The SADC Water Division adopted a consultative and participatory process for the formulation of the Regional Water Policy. The process has had four distinct phases that has made provision for ongoing feedback to allow the refinement of the outputs from each phase. The policy and strategy formulation process is illustrated in Figure 3 and explained in Table 1.

2.4.2 A strategic decision was taken to fast-track the drafting of the policy, and to elaborate the strategy following the formal approval of the draft policy. This has been done in order to allow the strategy formulation process to be better informed by a more comprehensive policy that has benefited from extensive consultations.

## 2.5 Conceptual Policy Framework

Figure 2 outlines a framework for the policy, in that it contributes towards the broad SADC goals of integration and poverty eradication, by meeting the water related objectives of industrial development (including agro-business), food security, access to water and sanitation, water for peace, energy security and safety from disasters. Underlying this is the objective of sustainable development, or development that does not compromise the environment. Integrated water resources management is the fundamental approach that has been adopted by SADC water sector, which is enabled through the development of tools related to institutional development, capacity building, stakeholder participation, information management, integrated planning, conflict resolution and environmental management. Each of these objectives and tools is addressed in the policy, with integrated water resources management being the common thread that links each to the other.

## 2.6 Policy Structure

2.6.1 The policy has nine thematic areas which address the water resources management issues outlined in Section 2 or are aimed at optimising specific development opportunities. The main policy areas are:

- 1) **Regional Cooperation in Water Resources Management:** including policy provisions on water for regional integration and socio-economic development; cooperation in water resources management of shared watercourses; inter-sectoral and international cooperation; and the harmonisation of national policies and legislation.
- 2) **Water for Development and Poverty Reduction:** containing policy provisions on water for basic human needs and for industrial requirements; water for food and energy security.
- 3) **Water for Environmental Sustainability:** containing policy provisions on water and the environment, water quality management, and control of alien invasive species in watercourses.
- 4) **Security from Water-related Disasters:** including policy provisions covering people's protection from water related disasters; disaster prediction, as well as management and mitigation.
- 5) **Water Resources Information and Management:** covering data and information acquisition and management; as well as information sharing.

- 6) **Water Resources Development and Management:** including policy provisions on a river basin approach; integrated planning of shared watercourses; dams and dam management; water conservation and water demand management; and alternative sources of water
- 7) **Regional Water Resources Institutional Framework:** including policy provisions covering institutional arrangements at regional and national levels and for shared water course institutions.
- 8) **Stakeholder Participation and Capacity Building:** including provisions focussing on participation and awareness creation; capacity building and training; gender mainstreaming; and research, technology development and transfer.
- 9) **Financing integrated water resources development in the region.**

2.6.2 The structure of the policy document consists of a sub-policy title, a policy statement followed by a brief explanation supporting or justifying the statement, or pointing out specific issues relevant to the policy in respect of each of the policy areas. The policy statements are presented in Chapters 3 to 11.

## **2.7 Implementation of Regional Water Policy**

2.7.1 The Regional Water Policy will be implemented through a Regional Water Strategy whose development is progressing in parallel, though not in phase, with the development of the policy. The strategy will elaborate mechanisms for implementing the policies laid out in this policy document.

2.7.2 An important vehicle for implementing the major part of this policy is the existence of well functioning river basin organisations established particularly on shared watercourses, operating under sound legislation, and systems for planning and stakeholder involvement, and embracing IWRM principles. In order for the Regional Water Policy to be implemented at national level, Member States would need to harmonise their policies with those of the regional policy.

2.7.3 It is also fundamentally important that there should be closer coordination of the Regional Water Policy with other sectoral policies in the SADC, especially the major water use sectors including agriculture, energy and environment. Inter-sectoral coordination at SADC level would be an important building block for integrated water resources development which is the basis for sustainable development.

**Table 1: Policy Formulation Process**

PHASE	Input Activities	Outputs
<b>Inception</b>	<b>Literature review</b>	Inception Report Key Focus areas Work Plan
<b>Study and Conceptualisation</b>	<b>Thematic Studies</b> <ul style="list-style-type: none"> <li>➤ Review of SADC Water Policies and Comparative Study with International Water Policies.</li> <li>➤ Study on Priorities of other SADC Sectors Relevant to RWPS</li> <li>➤ Review and Synthesis of Policy and Strategy Documents Related to the Southern African Water Vision</li> <li>➤ Water Resources Availability and WDM</li> <li>➤ FFA Process to Achieve the Vision.</li> <li>➤ Implementation of the Protocol</li> <li>➤ Guidelines for the Development of National Water Policies and Strategies to Support IWRM</li> <li>➤ Water Supply and Sanitation Programme for SADC</li> <li>➤ Key Dam Issues in the SADC Region</li> <li>➤ Water Conflict Monitoring and Prevention &amp; Resolution Mechanism</li> <li>➤ Midterm Review of RSAP</li> </ul>	Study Reports Policy Structure, broad policy outline, based on study reports.
<b>Formulation and Consultative Phase</b>	<b>Multi-stakeholder Inputs</b> <ul style="list-style-type: none"> <li>❖ Consultative workshop consisting of water experts from the SADC region, including senior government officials from water departments, legal ministries, and other sectors, senior researchers and academics from institutions of higher learning, and private consultants was held to review the policy outline and policy structure.</li> <li>❖ Preparation of Zero Draft RWPS.</li> <li>❖ Consultative workshop consisting of water experts from the SADC region to review Draft RWPS.</li> <li>❖ Elaboration of Strategy</li> <li>❖ Workshop by WRTC members to review the Draft RWPS</li> <li>❖ National consultative workshops to facilitate national inputs to the content of the RWPS and engender ownership.</li> </ul>	Zero Draft RWP  Final Draft RWP
<b>SADC Approval</b>	<ul style="list-style-type: none"> <li>• Clearance by SADC Secretariat</li> <li>• Endorsement by SADC Member States.</li> <li>• Approval of RWP</li> </ul>	RWP

**Figure 2: Conceptual Framework for Regional Water Policy Development**

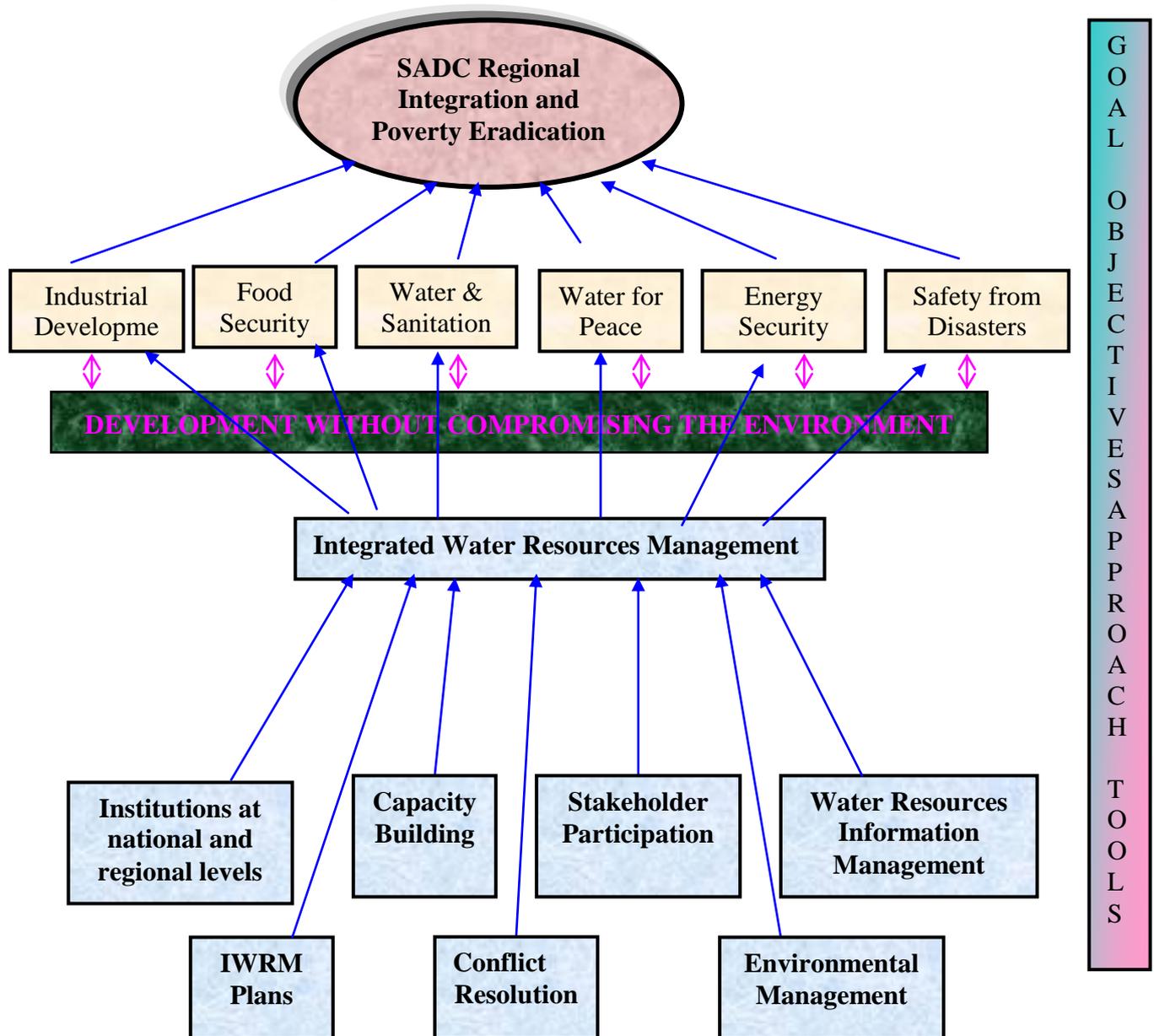
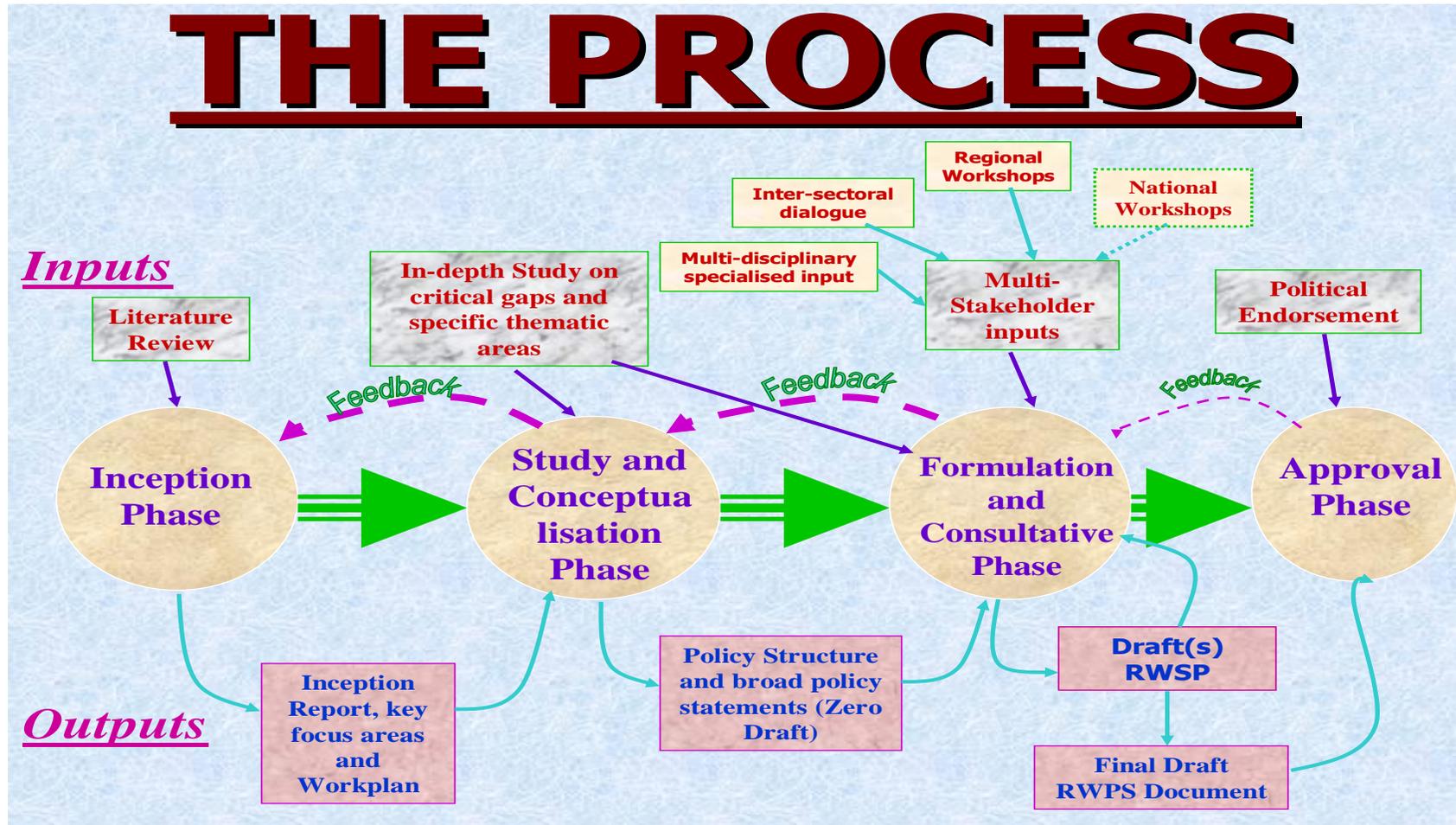


Figure 3: The Policy Formulation Process



## **PART TWO – POLICY STATEMENTS**

### 3. REGIONAL COOPERATION IN WATER RESOURCES MANAGEMENT

The overall management of water resources shall consolidate SADC goals and objectives of regional cooperation and integrations as follows: -

#### 3.1 Water for Economic Integration

**3.1.1. Policy:** *Water resources shall be developed and managed in an integrated manner to contribute to national and regional economic integration and development on the basis of balance, equity and mutual benefit for all Member States.*

In the SADC context, water resources development and management should contribute to the achievement of the SADC strategic priorities of regional integration and poverty eradication, while recognising the interests and sovereignty of Member States as outlined in the SADC Principles (stated in Article 4 of the Treaty). It is critical to recognise Member States' imperatives for national development within the context of this regional integration.

Integrated water resources management (IWRM) recognises the inter-connected nature of the hydrological cycle. This requires a river catchment or basin perspective to the management of water resources, even where these cross administrative and international boundaries. Water resources management is understood to include planning the development of water resources, implementing the plans and undertaking all measures for allocation, conservation and controlling the utilisation of the water resource. This understanding reflects the definition of "management of a shared watercourse" contained in the SADC Protocol, as well as definitions of IWRM by GWP in its publication "*Integrated Water Resources Management*" and the African Development Bank (2000) in its publication "*Policy for Integrated Water Resources Management*". Consequently, wherever the term "management" appears it includes "development", but for the sake of emphasis, the term "development and management" will also be used in the document.

**3.1.2. Policy:** *The Southern African Vision for Water, Life and the Environment shall be the reference point for water resources contribution to achieving regional integration, development and poverty eradication.*

The Southern African Vision for Water, Life and the Environment in the 21<sup>st</sup> Century is "*Equitable and sustainable utilisation of water for social, environmental justice, and economic benefits for present and future generations*" (see Box 1). This embraces the IWRM (see Box 2) approach and SADC strategic priorities and provides an important support to the Regional Policy and Strategy.

The Vision is further elaborated in the 8 explicit sub-visions, namely:

- Equitable and sustainable social and economic development in southern Africa
- Equitable access to water of an acceptable quantity and quality

- Proper sanitation for all and safe waste disposal
- Food security for all households
- Energy security for all households
- A sustainable environment
- Security from natural disasters
- Integrated water resources development and management

### **3.2 Water for Peace**

**3.2.1. Policy:** *Regional Cooperation in shared watercourses shall be guided by the Revised SADC Protocol on Shared Watercourses (herein sometimes referred to as “the Protocol”) and Member States shall observe and comply with the Protocol and the SADC Treaty.*

The Protocol formalizes the objectives and mechanisms for this cooperation and enables coherent and consistent cooperation between Member States. The Protocol shall continue to transform and enhance the realization of regional cooperation and effective water resources development and management in the region.

Regional cooperation in water resources development and management enhances peaceful co-existence between Member States, and strengthens regional security as the States sharing a watercourse are more likely to safeguard common or shared investments which yield mutual benefits to the participating parties.

**3.2.2. Policy:** *Watercourse States shall participate and co-operate in the planning, development, management, utilization and protection of water resources in the shared watercourses.*

Cooperation between watercourse States will entail participation in joint institutions, processes and projects. The Protocol provides the generic framework for cooperation between SADC Member States, but this should be based on multilateral and bilateral agreements between watercourse States, reflecting the specific physical and institutional conditions within the shared watercourse. These agreements should also reflect international conventions. Presently there are a number of shared watercourse agreements in the region (for example, the Zambezi, Limpopo, Orange, Okavango, Incomati, Maputo, Zambezi and the Cunene), many reflecting - to varying degrees - the provisions of the Protocol. Cooperation between Member States and other non-member watercourse States needs to be recognised and *formalised by establishing Agreements that follows the SADC Protocol in its essence.* This will require the establishment of agreements that are not necessarily governed by the SADC Protocol.

Shared watercourse agreements must be based on voluntary participation by the Watercourse States, resulting in cooperative action. This requires agreements to be supported by all parties, which is best achieved through a consensus seeking approach.

This process requires the building of trust between the Watercourse States, which may necessitate the participation of an independent neutral process facilitator, particularly at the early stages of the process. This facilitator should explore opportunities to create consensus between different positions, rather than to develop solutions.

**3.2.3. Policy:** *Member States shall endeavour to promote and exploit opportunities for joint water resources developments in shared watercourses to consolidate regional cooperation.*

The development of shared watercourses provides an opportunity to foster regional economic integration and cooperation through IWRM, and should be promoted where possible and whenever appropriate.

### **3.3 Water and Inter-Sectoral Cooperation**

**3.3.1. Policy:** *The SADC Secretariat, Member States and Watercourse Institutions shall ensure the collaboration of all affected sectors in the management of water resources to achieve the goals of regional integration, development, equity, poverty eradication and sustainability.*

The SADC Water Sector recognises the role of water as a source of life and its use for a variety of purposes including agriculture, hydro-electric power generation, domestic and industrial requirements, maintenance of public health, tourism and recreation, as well as the maintenance of ecosystems. In addressing the SADC strategic priorities the Regional Water Policy and Strategy must align with those other sector policies and strategies targeted at industrialisation, developing agriculture, the promotion of economic and social infrastructure, the environment and poverty eradication. The other sectors that link to water have common themes which have resonance with IWRM, such as Integrated Planning, Holistic Approaches and Sustainable Development.

This inter-sectoral cooperation must happen at the SADC level in terms of SADC Regional Policy and Strategy alignment. Cooperation is, as well, required within Shared Watercourses facilitated by SWCIs in ensuring appropriate allocation between sectors and Watercourse States dependent upon the water resources. This process needs to consider issues of sustainability, allocative efficiency, economic development and food security, all of which have implications for national and regional economic development, integration, employment and trade.

### **3.4 Harmonisation of National Policy and Legislation**

**3.4.1. Policy:** *Member States shall promote the harmonisation of their water policies and legislation with the regional water policy.*

The alignment of national water policies and strategies is also a prerequisite for effective IWRM within shared watercourses. The harmonisation of national policies and strategies is a cornerstone of the SADC goal of regional integration and development..

Therefore, although the development of a national policy and strategy is the prerogative of each Member State, the SADC Water Sector should create an enabling environment, and offer guidance and support to Member States in ensuring alignment with the Regional Policy and Strategy, as well as harmonisation of water policies and strategies between watercourse States involved in cooperative management of shared watercourses.

**3.4.2. Policy:** *National water policy and legislation shall take into account any international and regional conventions, protocols and policies accepted and/or already adopted by the Member States.*

Member States' policy and legislation needs to incorporate and give effect to the principles enshrined in the SADC Protocol (amongst others), in order to support the cooperative and integrated management of shared watercourses.

Where appropriate, these policies and legislation should reflect other relevant international water conventions and treaties, as well as some that go beyond the water sector to include customary international law.

### **3.5 Conflict Management in Water Resources Management**

**3.5.1. Policy:** *Member States shall pursue all avenues of amicable prevention and resolution of conflicts in water resources development and management in accordance with the principles enshrined in the SADC Treaty*

Article 4 of the SADC Treaty outlines the principles for conflict management, highlighting the need to avoid conflict and settle disputes amicably. An important consideration in avoiding conflict is to ensure that all parties develop a mutual understanding of the issues, including dissemination and sharing of available information. This understanding may be promoted through the development of SWCIs, and particularly through the regional economic and social integration underlying the SADC Treaty.

In order to facilitate conflict management in the region, it may be necessary to build capacities in relevant institutions at national and regional levels through training workshops on negotiation, conflict resolution, and to improve information sharing.

**3.5.2. Policy:** *Where amicable resolution cannot be achieved, conciliation, mediation and arbitration mechanisms should be pursued, with use of the SADC Tribunal or other recognised international arbitration structures only as the last resort*

The SADC Treaty provides guidance on the resolution of disputes that cannot be managed amicably. In this case, conciliation and mediation approaches are preferred, with arbitration through formal structures being the last option to be pursued.

### **3.6 Water for International Cooperation**

*3.6.1. Policy: SADC shall actively participate in and support other African Initiatives, as well as creating relationships with international initiatives on water resources management*

The linkages with other African structures, platforms and initiatives should be promoted through the SADC Water Sector (both the SADC Secretariat and Member States), particularly those related to the African Union, NEPAD and the African Ministerial Conference on Water (AMCOW.)

It is also critical for the SADC Water Sector to forge strong relationships with global water sector initiatives and international bodies. On the one hand this creates a platform for regional interests to be promoted on the global agenda, while on the other hand opportunities for development cooperation should be actively pursued.

## **4. WATER FOR DEVELOPMENT AND POVERTY REDUCTION**

### **4.1 Water for Socio-Economic Development**

**4.1.1 Policy:** *Water shall be considered as an economic good, which supports cross-sectoral regional economic integration and development, and shall be conserved, developed and managed to provide economic benefits.*

Water is a resource that is used as an input to regional economic production in a number of inter-related water using sectors. However, water is a limited resource and it has economic value. The management of water resources should recognise the value of water to economic development, emphasising beneficial use. The water should be used efficiently, with pricing and other mechanisms used to encourage water to be allocated to higher value uses (*allocative efficiency*) in order to maximise its net economic and social benefits and contribution towards poverty reduction.

**4.1.2 Policy:** *Water shall be considered as a social good that is essential to human dignity, poverty reduction and social well-being.*

In addition to being an economic good, water supports life and a range of social services. Therefore, allocation and access to water must consider the social benefit to people and the environment. However, there should be explicit recognition that the poor should have access to water at a price they can afford, based on subsidies directly targeted to the poor.

**4.1.3 Policy:** *Water allocation between Member States, sectors and users shall consider among other things the economic benefits balanced with social obligation and environmental requirements*

In allocating water within a shared watercourse, Member States should consider the economic development potential associated with water use, between sectors as well as between countries. Maximizing the total economic development opportunities through the allocation of water at a regional level supports SADC objectives. This also implies promotion of water efficient uses, with due regard to the social development and food security impacts of other uses such as irrigation. This implies the implementation of appropriate water pricing systems, to reflect its economic and social value.

**4.1.4. Policy:** *Regional water resources management, taking into account the overarching imperatives for resources utilization, shall consider the concept of comparative advantage in water availability as a means of promoting intra-regional trade, services, poverty reduction and balancing national water budgets in a sustainable manner.*

In this context water resources utilization referred to in this policy statement includes water supply, irrigation, hydropower, navigation, fisheries, environment, tourism, aquaculture, forestry and coastal interaction. Comparative and competitive advantage in the context of water resources

management recognises that countries that have water in relative abundance may produce goods and services, and also recognises the need to promote the development of disadvantaged countries in a way that will improve the welfare of the poor.

Comparative advantage in the use of water allows water scarce countries to import high water consuming products while reserving their limited water resources for use by low water consuming products, thus allowing countries to balance their water budgets in a sustainable manner.

Since agriculture is the largest economic sector in terms of water use, trade in agricultural products is the main component that should be considered in the trade in water intensive commodities. 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 contribute to poverty eradication in communities producing the food. However this approach needs to be balanced with the national governments' needs for food security and sovereignty, and will require a negotiated process based on integrated planning at a regional level.

## **4.2 Water Supply, Sanitation and Hygiene**

**4.2.1. Policy:** *Members States have a social and economic responsibility to ensure sustainable access to safe water supply for basic human needs in their respective countries.*

Access to safe water supply varies widely across the region. In about half of the SADC countries, access to safe water supply in the rural areas is less than 50%, but relatively higher in urban areas. The health and socio-economic implications are enormous in terms of mortality and sickness from waterborne diseases, children kept out of school, and women deprived of time for productive pursuits due to daily drudgery of fetching water and caring for sick family members.

Though provision of water supply is a local level activity and a responsibility of each Member State, the implications of lack of access have regional dimensions since diseases do not respect political boundaries, and effects of poverty in one country impact other States as well. Consequently, Member State governments need to be cognisant of their national (local) and regional responsibilities.

SADC Member States, as members of the UN, have made commitments to achieve the Millennium Development Goals, which includes, for water supply, reducing by 50%, by 2015, the proportion of people without sustainable access to safe drinking water. Therefore there is a national and regional imperative to support expansion of sustainable access to safe water supply.

**4.2.2. Policy:** *Member States will prioritise the allocation, access and utilisation of water resources for basic human needs over any other allocation, access and utilisation.*

Water is a basic need and equitable and sustainable access to water for drinking and domestic requirements should be guaranteed in the allocation of water resources above any other competing water uses. This has implications even for transboundary water resources, and SADC Member States shall cooperate and support priority allocation of water resources from shared watercourse systems to meet basic human needs.

**4.2.3. Policy:** *Member States will seek to provide, in addition to clean water for domestic use, water for productive activities to poor and marginalised communities in rural and peri-urban areas in order to alleviate poverty and to correct imbalances in development.*

Poverty reduction is not possible without improving access to water for domestic use for the people of the SADC region. The definition of “domestic use” varies from country to country within the SADC region. The definition adopted here is that provided by the SADC Protocol as “water for drinking, washing, cooking, bathing and stock watering purposes”.

The poor in urban as well as rural areas have been deprived of access to social services, including water supply and sanitation. This tends to perpetuate poverty and requires well targeted measures to address the problem.

In most SADC countries rural and peri-urban populations constitute the majority of the people in the country. It is therefore imperative that their requirements in terms of water supply should form the basis of deliberate policy interventions, even in the climate of commercialisation of water supply and sanitation services.

**4.2.4. Policy:** *To ensure sustainability of water supply services to all areas, cost recovery will underpin all infrastructural developments and operations, i.e. beneficiaries will pay an appropriate amount towards the cost of providing services, taking into account Member States’ social responsibilities to the poor.*

Provision of water supply will not have any impact on poverty reduction and on public health unless the facilities continue to function and provide the required amounts and quality of water. The key issue is sustainable access, not one-off investment.

Cost recovery does not negate the provision of grants or subsidies to poorer segments of society. Without government support, the poor may not be able to afford basic services. For poorer communities, governments will decide on levels and means of administering subsidies to support the poor, disadvantaged and vulnerable in society. The challenge is to design effective measures to ensure all users contribute a share they can afford to ensure sustainable services.

**4.2.5. Policy:** *Member States will facilitate the provision of sustainable access to adequate sanitation for all rural, peri-urban and urban households.*

Sanitation (here defined as measures for safe disposal of human faecal matter) 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 in low income peri-urban communities, which diseases are a severe drain on scarce financial resources for public health. Considering the large number of people without access to proper sanitation in many of the SADC 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.

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

Provision of water supply alone is not sufficient to improve public health; it requires complementary interventions to improve access to proper sanitation. Most waterborne and water-based diseases are the result of poor sanitation. Water supplies may be contaminated by poor disposal of excreta, or infections may arise from such unhygienic practices. In order to break the chain of disease transmission, proper sanitation facilities should be provided. In the past, the provision of water supplies has often received higher priority in funding from national budgets or external funding from cooperating partners. In order to overcome past neglect of sanitation and to provide an impetus for improvement of sanitation, deliberate efforts should be made to finance integrated programmes for water and sanitation.

**4.2.7. Policy:** *Public awareness, as well as hygiene education and practice should be integrated in the provision, operation and maintenance of water and sanitation facilities.*

Hygienic behaviour and practices are important in the improvement of health, where safe water supplies and proper sanitation have been provided. Personal domestic hygiene is particularly important for breaking the transmission of diseases, in encouraging proper use and storage of water, and promoting proper sanitation in the community. Hygiene education programmes should be incorporated in water and sanitation programmes to raise awareness about diseases and to promote positive hygienic practices. This is critically important where the prevalence of HIV/AIDS is high, both in terms of the use of water, and its relationship with health and poverty in the affected households and communities.

### **4.3 Water for Food Security**

**4.3.1. Policy:** *Member States will promote the attainment of regional food security rather than national self-sufficiency by developing those areas which*

*have comparative advantage for rain-fed and irrigated agriculture but will take into account economic disparities between Member States as cited in article 5.1 of the Treaty, with a view of levelling the playing field.*

Water allocation and utilisation is a key consideration for food security and reduction of regional economic asymmetries, requiring that the water sector supports the SADC goal of regional food security in planning and management of water resources. Some areas of SADC are better suited for comparative and competitive cereal production, while other areas have a comparative advantage in respect of other crops and services. Member States should be encouraged - requirements for national sovereignty notwithstanding - to promote areas of rain-fed agriculture and then the development of irrigation systems where these are viable for poverty reduction and job creation. Thus, instead of purely focusing on the benefits of higher productivity, that consideration is given to issues related to comparative and competitive advantage in water utilisation.

**4.3.2. Policy:** *Water resources development for irrigation in commercial agriculture should be planned in coordination with other sectors in the interest of IWRM.*

Commercial irrigated agriculture is the largest single user of water in the region, presently accounting for about 70% of all water use. In the past, commercial irrigation developments were not planned in an integrated manner in collaboration with other sectors. This has led to single purpose dams and inefficient allocation of water resources. The Policy on future dam development, based on IWRM principles is elaborated in Section 8.

**4.3.3. Policy:** *As a vehicle for promoting reliable food production and enhancing food security, sustainable irrigated agriculture and aquaculture will be promoted in all Member States with suitable water and land resources.*

Food production has been severely affected by droughts in various parts of the region over the last two decades. With the highly seasonal rainfall and variable flows in rivers, drought still poses a threat to food production. Reliability of available water for agriculture would promote dependable food production. Irrigated agriculture, if properly planned and well managed, would lead to more sustainable mechanisms for food production and higher productivity. Aquaculture is recognised as a vital source for healthy food production and hence, mechanisms for the promotion thereof in Member States should be developed and implemented.

**4.3.4. Policy:** *Member States will promote improved tillage and rainwater harvesting techniques to optimise the use of water by rain-fed agriculture.*

The bulk of crop production throughout the SADC region is based on rain-fed agriculture. The most efficient strategy for raising production, particularly of households presently locked into subsistence farming, is to increase yields through improved tillage techniques and harvesting of “green water”. **Green water** refers to water in unsaturated soil responsible for the production of biomass that accounts for 60% of the world food production. This is distinctly

different from **Blue water** which refers to water in rivers, lakes and shallow aquifers and in the past has received most of the attention from planners, engineers and policy makers because of its association with established forms of irrigation. However, the availability of green water dwarfs that of blue water and, therefore, has vast potential to improve crop production.

For maximum benefit to communities, other inputs and assistance (particularly with the marketing of cash crops) should be provided in comprehensive agrarian reform programmes.

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

This has two aspects. The first is to give protection from the devastating effects of failed rainy seasons, which in the absence of alternative sources of water lead to hunger, loss of livestock and exacerbates poverty. The second is to provide opportunities for households to diversify their cropping patterns, improving household nutrition and also producing commodities for sale, generating higher incomes and thereby attacking poverty directly.

Properly targeted support should be provided to rural communities to plan, implement and manage small scale irrigation schemes. These may also be designed to provide water for livestock and opportunities for aquaculture. Where possible the provision of productive water should be integrated into domestic water and sanitation programmes. Too often in the past the potential of providing sufficient water for productive as well as domestic use has not been exploited, due to the narrow health focus of the traditional rural water supply and sanitation approach.

**4.3.6. Policy:** *Member States will promote 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 SADC are inefficient, resulting in very high water losses, averaging 40-60%. Such high water losses are unsustainable, potentially depriving other users of scarce water resources. Irrigation schemes should aim for higher water use efficiencies, so as enhance conservation and to free water resources for other productive sectors. It is encouraging to note that efforts are already being made in some parts of the region to move towards water use based on efficient technologies in irrigation.

**4.3.7 Policy:** *Water requirements for livestock - including both livestock watering and maintenance of grazing land - shall receive adequate consideration in water resources allocation and management at regional as well as national and local levels.*

Livestock requires sustainable access to water supplies and grazing areas all year round. Consequently, livestock water requirements need to be integrated

into water resources management at regional, national and community levels. This is particularly vital for rural communities who depend on surface water sources and rain-fed pastures to manage their livestock production. For rural communities, livestock is an important source of livelihood, it is exchanged for cash and it provides animal traction for cultivation and for transport as well as organic manure for fertilizer. Livestock management in rural areas is very vulnerable to the effects of droughts on grazing land, and water for animals. Where this has happened in the past, loss of livestock has exacerbated rural poverty by depriving communities of a source of food, means of animal traction, fertiliser and income from sales. Therefore improved livestock management has a significant contribution to make to the reduction of rural poverty.

#### **4.4 Water for Energy Development**

**4.4.1. Policy:** *Member States will optimise the use of hydro-electricity generation potential so as to provide cheaper, more environmentally friendly sources of electrical energy to the region.*

The SADC water sector is an important resource to be considered in the development of energy throughout the region. The establishment of the Southern African Power Pool (SAPP) and the extension of the interconnected electricity grid, which now covers most of the region, has provided one of the most significant opportunities for regional cooperation in SADC. By trading electricity on SAPP's Short-Term Energy Market (STEM), some Member States are already enjoying cost savings and improved reliability of electricity supply. The real potential for regional benefits will be realised, however, from future joint planning of electricity sector capacity expansion, to take advantage of the significant economies of scale which exist in electricity generation.

This is where the water sector has a significant role to play, in facilitating and encouraging the development of major hydroelectricity generation schemes, mainly in the north of the region (e.g. on the Congo and Zambezi Rivers), with electricity being exported to the areas of high demand in the south. The exporting countries will secure an important source of revenue from electricity exports, much of which will be spent on imports from within the region, thereby further expanding regional trade. The hydro-electricity importers will avoid the adverse environmental consequences of developing domestic hydrocarbon or nuclear-based sources of power in their own countries. For the region as a whole, the cost savings made in the provision of hydroelectricity will allow investment resources to be channelled into productive activities, raising the pace of economic growth.

**4.4.2. Policy:** *Member States will encourage the use of technologies that are more efficient in terms of water use, for the cooling industrial processes and electric power generation stations.*

Dry cooling technology for coal-fired power stations has been successfully developed in the region. Where water resources are scarce, old and new thermal power stations should take advantage of technological developments and be

designed to minimise or even eliminate the use of water for cooling purposes. The adoption of water-efficient technologies and practices is similarly to be encouraged in all ‘wet’ industries.

**4.4.3. Policy:** *Member States will encourage the development of small-scale hydropower to service energy needs of rural communities.*

Small-scale hydropower generation could provide power for water pumping 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 assisting in stemming rural-urban migration.

## **4.5 Water for Industrial Development**

**4.5.1 Policy:** *Member States shall allocate water for industrial requirements (manufacturing, mining, tourism, navigation and afforestation) at economic value of the resource.*

Water is an economic factor of production in many industrial activities including manufacturing, agro-industries, mining, and tourism. Industrial water users should pay economic cost of services. Economic pricing of water encourages efficient water use, and enables the water resources institutions to collect sufficient revenue to sustain the provision of services. On the other hand inefficient allocation of water leads to wastage of the scarce resource.

Water use for tourism and navigation is often non-consumptive and may be integrated with in-stream use and environmental water requirements; therefore the pricing mechanisms may require special considerations. However water for afforestation is consumptive, but forests enhance water conservation in catchments and improve environmental sustainability.

Management of effluent from industrial activities, or even from navigational activities may have a significant impact on water quality of watercourses. This also requires appropriate monitoring and control of the potential pollution.

## **4.6 Water for Sports and Recreation**

**4.6.1 Policy:** *Water resources allocation at national and regional levels shall consider allocating water for Sport and Recreation.*

Water sports and recreation are legitimate uses of water in the watercourses in the SADC region. Therefore mechanisms for allocating water resources shall consider the necessary water requirements for sports and recreation. In most cases the water requirements for sports and recreation are non-consumptive, and may be included in in-stream use. In some situations, the water requirements for sport are consumptive. Regardless of the situation, allocation shall consider the legitimate uses of water for sport and recreation.

## 5. WATER AND ENVIRONMENTAL SUSTAINABILITY

### 5.1 Water and the Environment

**5.1.1. Policy:** *The environment is recognised as a resource base and a legitimate user of water in the SADC region and Member States shall adopt all necessary strategies and actions to ensure that the environment is sustained.*

The role of the environment as a source of water has not been adequately recognised in the past. However, the WSSD recognized the environment as a natural resource base for development. Environmentally sustainable water use combined with sound management generates sustainable benefit for humans. Polluting the environment or using the water faster than it is replenished poses a serious threat to the sustainability of watercourses in the region; therefore water resources development and management initiatives should take full cognisance of this interrelationship.

Watercourse States and SWCIs should cooperate in adopting an ecosystem and river basin approach in protecting the environment as a resource base. Sound catchment management practices should be adopted to protect and sustain the ecosystem, biodiversity, estuaries and wetlands

**5.1.2 Policy:** *Member States should, in their mechanisms for allocating water resources among many users, allocate sufficient water to maintain ecosystem integrity and biodiversity including marine and estuarine life.*

Environmental water requirements have a legitimate demand on the available water resources in the region. The lakes, rivers and wetlands are important sources of fish and other foods which are vital to the life of rural communities in particular and the rest of society. Tourism, which is an important industry in the region employing many people in urban and rural areas, depends on the integrity and the biodiversity of ecosystems. Therefore preserving the environment makes social and economic sense

Releasing flows below dams to maintain minimum stream flows, ensuring the flooding of wetlands so as to sustain certain habitat or maintaining watering holes in game management areas are amongst the environmental flow requirements which should be considered as legitimate demands on the available water resources.

For shared watercourses, all the Watercourse States should agree on the quantity of water for sustaining the environment. Such quantities will vary with the specific nature of the environment, seasons, and prevailing flows. SADC will need to develop common methodologies for determining environmental flow requirements.

## **5.2 Water Quality Management**

**5.2.1. Policy:** *SADC should harmonise and uphold common minimum standards of water quality in shared watercourses.*

Water quality standards vary from country to country in the region. The maintenance of these national standards is generally constrained by lack of material, human resources and financial capacity. There is a dire need to develop minimum water quality standards in shared watercourses and pool available resources for their maintenance. Meeting the minimum quality standards is particularly critical where watercourses cross political boundaries. This will also minimise the potential for conflict within shared watercourses.

**5.2.2. Policy:** *Member States should individually and collectively adopt necessary measures to prevent and control pollution (point and non-point sources) of ground and surface waters resulting from inland, coastal or offshore activities.*

Pollution of both surface and groundwater is on the increase in the region particularly from mining, agriculture (fertilisers, pesticides, herbicides etc) and industrial activities. The peri-urban areas, with the usual high density settlements, lack of 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 have not been adequately identified. Where point sources have been identified monitoring has been limited by lack of water quality data, capacity and resources.

Pollution by one party can impose cost to another and reduce economic opportunities as well as imposing serious health costs. Member States should therefore adopt the “Polluter Pays” principle to assist in the implementation of pollution control mechanisms in their respective States.

On shared watercourses, pollution is a potential source of conflict; therefore Watercourse States should co-operate and pool their resources in addressing these emerging problems.

**5.2.3. Policy:** *Member States shall not import pollutants into the region for disposal which can affect watercourses*

Industrialised countries are progressively running out of space for their waste disposal. On the other hand many SADC countries are impoverished which makes them vulnerable to financial incentives to import waste for disposal in the region. SADC needs to adopt strict measures to prevent importation of such pollutants for disposal which can affect watercourses in the region.

Many, if not all, SADC Member States have signed and ratified global agreements (for example, the Stockholm Convention on Persistent Organic Pollutants (POPs) or the Rotterdam Convention on the Prior Informed Consent (PIC) Procedure for Certain Hazardous Chemicals and Pesticides in

International Trade) which control and manage the importation and use of pollutants. SADC institutional structures should work within these agreements and with national focal points to strengthen the efforts to prevent the region becoming a dumping ground for pollutants from outside the region.

**5.2.4. Policy:** *Environmental Impact Assessments (EIAs) should be a mandatory requirement for development initiatives in the watercourses, and Member States are encouraged to undertake Strategic Environmental Assessments (SEAs) where feasible.*

Member States are actively promoting investment for employment creation and poverty reduction. There is a potential for such development to compromise water quality, the environment in general and social integrity. There is a need for SADC to set minimum common environmental compliance standards to be met prior to authorisation of development initiatives. In some cases project developers prepare and commission EIAs. However, there is a need for EIAs to be carried out by independent institutions/agencies. The EIAs, usually project oriented, should be broadened to encompass Strategic Environmental Assessments, which are more useful and focussed on assessing options and planning decisions. More importantly, however, SADC should ensure that the EIAs are adequately implemented and monitored.

### **5.3 Alien Invasive Species**

**5.3.1. Policy:** *Member States are individually and collectively responsible for the control of alien invasive species with the ultimate aim of total eradication of those which are non-economical.*

The sustainability of water resources in the region is threatened by alien invasive species in the region. These have and continue to colonise catchments and water bodies, posing a key challenge to water resources development and management. While some species may find economic use, all alien invasive species should be controlled.

Member States need to cooperate in the control of alien invasive species with the ultimate goal of total eradication of those which are non-economical since, like water, they are transboundary. There is an urgent need to develop a SADC wide strategy for controlling and managing alien invasive species.

## **6. SECURITY FROM WATER-RELATED DISASTERS**

### **6.1 People's Protection from Floods and Droughts**

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

The protection of people and property is a fundamental function of Member States' governments, and they have the mandate and mechanisms to mobilise and manage resources to prevent and manage the impacts of natural disasters at a national, watercourse and regional level. Commitment to this policy should be demonstrated by creating conditions that reduce the risk of disaster, such as appropriate land-use planning, settlement policies, and climate change strategies.

The SADC region is prone to extreme meteorological events, being susceptible to severe droughts and extreme floods. Human activities and global warming is recognised as exacerbating these natural disasters, with the related consequences on people's quality of life and the environment. Floods and droughts have a particular impact on domestic public health, food security and energy security, which in turn has an impact on poverty and economic development, especially in respect of the rural poor.

*6.1.2. Policy: SADC Secretariat and SWCIs shall facilitate and coordinate the management of natural disasters at a shared watercourse and regional level.*

The management of water related natural disasters within shared watercourses should involve a range of role-players within different countries and therefore requires coordination at a shared watercourse and regional level. The SADC Secretariat and SWCIs are the most appropriate bodies to facilitate this cooperation and promote regional proactive and integrated prediction, planning and mitigation of natural disasters. Member States must actively participate in processes and mechanisms for regional cooperation around disaster management.

### **6.2 Disaster Prediction, Planning and Mitigation**

*6.2.1. Policy: The SADC Secretariat, Member States and SWCIs shall be committed to improving the region's capacity in predicting water-related disasters associated with floods and droughts through coherent and effective regional and watercourse strategies.*

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 systems and technologies.

**6.2.2 Policy:** *Member States shall develop and implement integrated and coherent regional and watercourse level management plans and procedures for the management of natural disasters and emergency situations.*

Emergency preparedness for floods and droughts requires proactive planning at a watercourse and regional level, outlining the approaches and procedures for predicting, controlling and mitigating emergency situations (including natural disasters). This should be based on coherent multi-level (regional, watercourse and national) plans, with integration at a shared watercourse level, emphasising risk management and the vulnerability of people and property.

**6.2.3. Policy:** *Regional disaster management planning shall be aligned with other sector disaster management plans and involve consultation with relevant stakeholders*

Natural water-related disasters have significant impacts on and are impacted by other sectors, including agriculture, food security, energy security, domestic supply and industrial development. Alignment between water sector disaster management plans and those of other sectors is essential for coherent management of the impacts of disasters (particularly for droughts). At a minimum, this requires water sector plans to address and be addressed by other sectors' plans. The development of these plans should involve consultation with these sectors, as well as relevant stakeholders with an interest in disaster management.

**6.2.4. Policy:** *Each Member State has an obligation to notify and share knowledge and information with affected watercourse States in the event of actual or pending water related disasters*

Mitigation of the impacts from natural disasters and emergency situations requires all parties to have information to support decision-making. This includes notification of an imminent or actual disaster, as well as sharing of information to support decisions, and implementation and management of mitigation measures according to agreed disaster management and emergency preparedness plans and procedures.

## **7. WATER RESOURCES INFORMATION MANAGEMENT**

### **7.1 Data and Information Acquisition and Management**

*7.1.1. Policy: Member States shall establish water resources data and information acquisition and management systems in their territories in an integrated manner at regional, river basin and national levels to meet all water resources management needs.*

Good quality data is essential for water resource planning and management. Therefore Member States should establish and/or cooperate in establishment of efficient hydrological, hydrogeological and meteorological data acquisition and dissemination systems at regional, river basin and national levels, and also strengthen the capacity of national and regional hydrological agencies capacities for data analysis and information management.

Given the high variability of hydrological and climatic conditions in the region, the collection, storage, processing and management of hydrometeorological data (quantity and quality as appropriate), as well as socio-economic, demographic and water use data is essential for monitoring and assessment of the water resource base. Data collection and management is a continuous activity, and any discontinuities in the process compromise future water resources planning as well as the prediction and management of floods and droughts.

*7.1.2. Policy: Member States shall adopt compatible systems for data and information acquisition and management.*

Member States are encouraged to exchange data and information and use such data and information for the purpose of decision making in water resources management. It is therefore, important that such data and information is of the same or compatible standards. Thus, Member States should collectively develop and agree on minimum standards for infrastructure and user-friendly technology for the collection and processing of data and information on hydro-meteorology (meteorology, hydrology, hydrogeology, water quality, etc.) and water use (abstraction, irrigation schemes, hydropower plants, dams, in-stream demands and other water resources developments).

### **7.2 Information Sharing**

*7.2.1. Policy: Member States shall share timeously relevant available information and data regarding the hydrological, hydro-geological, water quality, meteorological and environmental condition of shared watercourses.*

In order to manage and utilise water resources in the region in an equitable, sustainable and integrated manner and advance regional integration, Member States need to share data and information on available water resources in the region. This should include data and information on planned and existing projects as well as emergency situations such as floods, droughts and pollution.

The exchange of data and information on water resources would also enhance confidence building and cooperation among Member States.

**7.2.2. Policy:** *Member States shall ensure that the public in the region have access to relevant and understandable water resources information impacting on their health, safety and economic interests.*

For all stakeholders to be able to participate effectively in water resources management, they need access to information so that they may be better informed about choices they have to make or inputs required of them in participating in the SADC regional integration, development and poverty reduction. They also require access to information on emergencies such as floods, droughts and pollution incidents.

**7.2.3 Policy:** *SADC Secretariat, SWCIs as well as Member States shall establish mechanisms for regular interpretation and dissemination of essential information on water resources so that the public is regularly informed.*

Regular flow of information, for example, flood data during periods of high flows, would enable the public to be better informed and participate in water resources management. Readily available information builds confidence especially among the poor who do not, usually, have the means or the know how to obtain such information through official channels.

### **7.3 Water Resources Assessment**

**7.3.1 Policy:** *Member States shall adopt common or compatible procedures and methodologies for carrying out regular water resources assessment at regional, shared watercourse and national levels.*

In order to provide a common base for sharing information on water availability or the status of the water resource in relation to planned utilisation, Member States shall agree and adopt common methods for evaluating water resources. From an IWRM perspective, water resources assessment incorporates cross-sectoral issues including assessing demand for water between competing uses, environmental assessment (environmental implications of various development activities) and social assessment (how the proposed development activity might affect social and institutional structures).

## 8 WATER RESOURCES DEVELOPMENT AND MANAGEMENT

### 8.1 River Basin Approach

**8.1.1. Policy:** *Member States will adopt a river basin or watercourse approach in the planning, development and management of water resources. This applies, in particular, to shared watercourses within the spirit of the SADC Protocol on Shared Watercourses.*

Within a river basin, water flows from the furthest point (on the boundaries of the basin) to the lowest point. There are physical interactions between activities on land and water systems, between activities upstream and downstream, between surface water and groundwater. Thus basing the planning of water resources on the basin as a whole ensures greater attention to the on-going processes and interactions which take place within the watercourse. The basin is a “natural” boundary and most suitable for planning, whether or not the basin crosses internal administrative boundaries or international borders. In watercourses shared with non-Member States, this approach may be applied in respect of those catchment areas that are wholly within the SADC region. Where possible, opportunities to engage non-Member States, who are within a shared watercourse, will be explored.

**8.1.2. Policy:** *Watercourse States will prepare and implement river basin development plans in an holistic and integrated manner, with the involvement of stakeholders to achieve equitable and efficient utilisation.*

Planning of water resources has to be people-centred and should be carried out in such a manner that the stakeholders, particularly the users, feel they own the plan. Involvement of all stakeholders ensures that the concerns of those who would benefit from and those who would be prejudiced by the plan have had an input into the planning process. The challenge, particularly in a transboundary context, is to find effective ways for stakeholder participation, given that there will always be a range of stakeholders, involving a mix of socio-economic groupings. The more articulate and well-resourced groups should not be allowed to dominate the process.

A holistic and integrated approach requires the consideration of the totality of activities and processes and their inter-relationships. Integration should be at the level of physical systems, such as joint exploitation of ground and surface water and at the operational level, such as managing competing demands on the available water resources.

**8.1.3. Policy:** *The planning, development and management of shared watercourses will consider the integrated use of surface and ground water resources, the reuse of water, proper pollution management and the provision of environmental requirements.*

In a river basin, surface water and groundwater systems are closely related. Baseflow of most rivers is highly dependent on groundwater and in some cases pumping groundwater depletes the baseflow. Surface irrigation yields return

flows, which affect baseflows. Consequently the interaction between surface and groundwater, and the potential of conjunctive operation, need to be carefully considered in the management of both systems.

**8.1.4. Policy:** *Water resources allocation will be based on equitable and reasonable use through negotiations between watercourse States.*

The Revised Protocol on Shared Watercourses provides a framework for determining equitable allocation and reasonable use. It is based on weighting factors which take into account physical, social, economic and environmental characteristics of the shared watercourse including its physical characteristics, the socio-economic and environmental requirements of the Member States sharing the basin as well as potential development of the watercourse.

**8.1.5. Policy:** *Member States will ensure that major water uses in the watercourses, particularly in shared watercourses will be regulated through authorisations such as a system of permits.*

Regulation of water use in the basin is important as it serves as the basis for planning and optimising the utilisation of water resources. For shared watercourses, appropriate regulatory mechanisms should be negotiated between the Member States, implemented in a transparent manner and in a spirit of fairness. A system of permits is necessary to ensure that allocations can be monitored and regulated.

## **8.2 Integrated Planning**

**8.2.1. Policy:** *Planning, development and management of water resources in the region should be based on the principles of IWRM and shall take full cognisance of the cross-cutting nature of water.*

Integrated planning is a fundamental requirement of IWRM. Noting that water is cross cutting in nature not only across political boundaries but across sectors as well, this imposes serious challenges and opportunities for cooperation between various sectors using water in their operations. This will entail both vertical (across different levels of society) and horizontal (across different sectors) integration in all relevant sector institutions in the region.

The application of IWRM is more likely if the national water policies have adopted and incorporated IWRM principles. Therefore an important issue in harmonisation of national water policies is the adoption of IWRM at national level.

**8.2.2. Policy:** *Watercourse States shall promote joint planning and implementation of water resources development within their shared watercourses and transparently notify and/ or engage other watercourse States, who are not proponents of the project, in a dialogue.*

A basin plan for a shared watercourse must envisage future development possibilities and seek to meet the objective of advancing equitable, sustainable and reasonable utilisation of the resources.

Where a significant infrastructural development is envisaged in a basin, but is not on the shared part of the watercourse, the Member State promoting the project is to consult with the other basin States and provide an opportunity for non-objection by these States. When the project is on the shared part of the watercourse, the planning, development and management is to be undertaken jointly. The equitable sharing of the costs and benefits of the development is a matter for negotiation, within the framework provided by the Protocol.

### **8.3 Water Demand Management**

*8.3.1. Policy: When planning the development of water infrastructure and services, Member States or river basin organisations shall aim to utilise existing capacities more efficiently as part of the process of augmenting water supply.*

The reorientation of water resource management from the supply-oriented approach to an emphasis on water demand management has shown that the cheapest water for tomorrow may be the water that is being wasted today. Inefficient water use is not just unsustainable under a situation of water scarcity, but also imposes significant costs on the economies of the region. This underscores the dire need for ensuring that an options analysis is undertaken prior to embarking on infrastructural development projects e.g. construction of dams and inter-basin transfer schemes.

However, it must also be recognised that the majority of the people in SADC region are not using adequate water for basic needs or for local productive use and are highly vulnerable to drought. In many cases the most appropriate option is to develop small localised water storage facilities in support of local poverty eradication.

In all SADC countries, there are large inefficiencies of water use in irrigated agriculture, industries and households, high percentages of unaccounted for water in urban water supply systems and losses, even at point sources, in rural areas. All these require audits and critical assessment to determine where efficiencies can be improved, so as to maximise outputs from existing sources. This will involve a wide range of interventions, including changing the behaviour of consumers, disseminating water efficient technologies, introducing efficiency-inducing pricing structures, reducing leakages in distribution networks and improving operating rules in supply systems.

The reallocation of water within sectors (for example by changing from growing low value, high water-demand crops to high value, low water-demand crops) and between sectors (for example from irrigated agriculture to mining and industry) are also important strategies for making better use of existing water resources before investing to expand supply capacities.

**8.3.2. Policy:** *Water-demand Management (WDM) will be pursued by Member States as a fundamental requirement for integrated planning and management of water resources, particularly in shared watercourses.*

Water-demand Management is the use of price, quantitative restrictions and other devices (e.g., leakage detection and control in water supply systems) to control the demand for water. The potential benefits of WDM are significant, both from a national viewpoint and in terms of creating an appropriate framework for regional co-operation between shared watercourse States. WDM needs to be vigorously pursued by Member States in all river basins.

In a regional setting, one of the fundamental aspects is that upstream countries should be making the best use of the water being extracted from shared watercourses. Before negotiating for higher levels of extraction, a full programme of WDM (involving appropriate levels of both technical and allocative efficiency) should be evaluated and implemented.

The level and intensity of WDM effort that is appropriate and economically efficient will change over time. When demands on shared water are modest, it would be unreasonable to require extreme WDM measures to be applied by upstream users. Most WDM measures involve costs, for example the capital investment associated with moving to a more sophisticated water efficient irrigation technology. There is a trade-off to be made between the investment costs incurred upstream and the value of the water made available downstream. As pressure on the shared resource grows, a higher level of efficiency of use, and thus higher WDM effort, will become justified in the upstream country.

## **8.4 Alternative Sources of Water**

**8.4.1. Policy:** *Member States will promote alternative sources of water such as rainwater harvesting, desalination, reuse of water, recycling and reclamation. Relevant research should be promoted as and where appropriate.*

The importance of increasing agricultural yields through improved tillage and rainwater harvesting has already been discussed in Section 4.3.1. Rainwater harvesting also has potential to enhance availability and security of water supplies in urban areas. This is particularly useful in those areas not connected or far away from centralised municipal water supply systems, such as in peri-urban areas. As the technology improves and costs diminish, use of solar energy to desalinate seawater could provide an important source of water for certain locations in SADC at a future stage.

Member States should cooperate in research initiatives to assess the potential for, and the best practical mechanisms for implementation of alternative water sources such as rainwater harvesting, recycling and reuse. In view of the constrained resources within SADC to support extensive research initiatives of this nature, significant benefit may be derived from an investigation of the existing body of research findings from appropriate international studies on alternative sources of water.

## **8.5 Dam Development and Management**

**8.5.1. Policy:** *Integrated planning, development and management of dams will be promoted so as to optimise the use of the water resources, maximise derived benefits (such as hydropower, tourism, flood control, irrigation and water supply) and take both positive and negative externalities into account for both upstream and downstream countries.*

In the past large dams, for example hydro-electricity schemes, have invariably served as single-purpose developments. In planning such initiatives, scant attention has been paid to the potential for the co-development of additional consumptive and non-consumptive use initiatives. Once a large dam has been built on a river, flood control is an important benefit. Consequently all dams, whether large or small, shall be designed and operated to maximize multi-purpose uses wherever these are financially, physically and environmentally feasible. In future, when building a large dam, Member States will consider the potential multi-functionality of dams that will serve to, promote integrated water resources development and management.

The use of small dams for multiple purposes should not be underestimated; they could contribute significantly to ensuring reliable domestic and livestock water supply in rural areas, support small scale irrigation, promote tourism, and regulate seasonal flows to provide reliable all-year round flows. They directly support local commercial and community initiatives and mitigate against drought.

In view of the fact that, in future, more large dams are expected to be built in the region for energy development, storage for irrigation, water supply as well as for flood control, dam safety considerations will have to be strengthened through development of appropriate safety guidelines, as well as the establishment of institutional capacities for enforcement of such guidelines.

Dams may have varying impacts on the environment, and the society. 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. Comprehensive and objective assessment of the economic, social, and environmental impacts should be carried out and adequate mitigation measures put in place.

**8.5.2. Policy:** *SADC shall encourage the participation of all stakeholders in decision-making processes for dam development and, where appropriate, with adequate facilitation and empowerment of vulnerable groups to ensure their effective involvement in decision-making.*

Dams, particularly large dams, have significant impacts on the environment and society. Consequently all stakeholders at regional, basin, national and local levels who will be impacted by dam development need to be involved in decision making. For dams on shared watercourses the stakeholders include officials of governments of the watercourse States or representatives of river basin organisations, as well as the communities who will be directly affected.

Identification of the stakeholders is the first step in the participatory planning process. Equally important is the establishment of mechanisms for stakeholder participation, including defining how and when the various stakeholders will be involved in the decision-making process. The development and adoption of participation guidelines may be useful in this regard.

Member States also need to empower all stakeholders to participate, particularly those from vulnerable groups. This may require the provision of financial resources (including transport and accommodation) to enable stakeholder participation. In addition, this also includes awareness raising, access to information, training and confidence building.

**8.5.3. Policy:** *Watercourse States will negotiate on operating rules for dams on shared watercourses so as to optimise the socio-economic and environmental benefits in an equitable manner.*

The operational rules for a hydro system should be designed not just to optimise electricity generation or other uses, but also to allow for flood control and cater for other environmental matters.

Dam operations should be undertaken on a basis that takes due cognisance of the impact of upstream actions on water users downstream. For example holding back water to maximise hydro-electric power generation can reduce water for irrigation downstream and thus reduce food production. Thus to maximise benefits in a shared watercourse, an integrated approach should be applied in the management of the shared water resource.

## **8.6 Affected Communities**

**8.6.1. Policy:** *Watercourse States shall promote the development and implementation of water infrastructure projects through a participatory process, especially of affected communities.*

The principle of consultation with and participation of stakeholders is one of the key IWRM principles. This principle is aimed at ensuring that those who will be affected by the proposed development have an opportunity to influence the outcome and safeguard their interests. Consultations will be carried out at basin or community levels through any appropriate channels and Member State Governments should facilitate such consultation.

**8.6.2. Policy:** *Member States will put in place proper legislation to provide for equitable compensation of affected communities, so that they will not be worse off as a result of the project.*

IWRM seeks to maximise the economic and social benefits arising from any water resource development project. Furthermore, the Southern African Water Vision calls for social justice and economic benefits for present and future generations. These objectives need to be backed by appropriate legislation.

These provisions therefore oblige Member States to exercise social responsibility and promote the development of the affected communities in their respective countries. These affected communities may include communities in neighbouring countries. Factors to receive attention include establishing measures for compensation and resettlement of those directly affected by water development. Compensation mechanisms should be enshrined in the legislation of each Member State.

## 9. REGIONAL WATER RESOURCES INSTITUTIONAL FRAMEWORK

### 9.1 SADC Secretariat

**9.1.1. Policy:** *The SADC Secretariat is responsible for promoting and coordinating the implementation of the Regional Water Policy and Strategy and Protocols for the water sector, in cooperation with other sectors such as health, energy, agriculture, tourism and environment.*

The SADC Secretariat has mandated the Water Division in the Directorate of Infrastructure and Services as the “custodian” of the Regional Water Policy and Strategy. As such, the Water Division is primarily responsible for promoting, coordinating and monitoring the implementation of the Revised Protocol on Shared Watercourses, as well as encouraging and guiding regional harmonisation of national policy and legislation.

SADC through its RISDP requires each “intervention area/programme” (including water) to develop a detailed implementation plan that includes specific time bound targets and strategies, implementation and management roles and benchmarking. The RSAP currently represents the SADC Water Sector’s implementation plan. The SADC Secretariat will expand the RSAP to reflect a programmatic approach to implementing the Regional Water Policy and Strategy, based on water sector priorities and linkages to other SADC sectors such as health, energy, agriculture and tourism.

**9.1.2. Policy:** *The SADC Secretariat is responsible for supporting SWCI and assessing their compliance with and implementation of the Revised Protocol*

The Secretariat (through the Water Division) is responsible for promoting and monitoring the implementation of the (Revised) Protocol, which is the framework under which SWCIs operate.

**9.1.3. Policy:** *The SADC Secretariat is accountable to the Member States through the Council of Ministers and shall ensure direct coordination with National Water Departments*

With SADC restructuring, the SADC Water Division is part of SADC Secretariat, which is the executive arm of the Council of Ministers. A regional water liaison body must enable Member States Departments of Water to guide the SADC Secretariat and to support the implementation of the Regional Water Policy, Strategy and Protocol.

#### **Responsibilities / functions of the SADC Secretariat (Water Division) include:**

- Development and facilitate the implementation of the Regional Water Policy and Strategy (RWPS)
- Develop short term regional strategies and Implementation plans
- Monitor the implementation of the Revised Protocol on Shared Watercourses and the RWPS.
- Develop a monitoring and evaluation system of regional water programme.
- Establish, coordinate and strengthen regional networks to carry forward water sector programmes
- Mobilise or facilitate the mobilisation of financial and technical resources to carry out water sector programmes
- Report to SADC Council of Minister through the Integrated Committee of Ministers (ICM) on the

**9.1.4. Policy:** *The SADC Water Sector's achievement of its development goals, objectives, strategies, programmes and institutional performance shall be assessed through a coherent monitoring and evaluation system.*

A regional water sector monitoring and evaluation system should be coordinated by the SADC Secretariat to ensure regional consistency, but would be implemented at a number of levels; including regional, shared watercourses, national, and project levels. It would be appropriate to link this system with other sectors within SADC to ensure a coherent monitoring and evaluation system.

Successful and sustainable implementation of the Regional Water Policy and Strategy, the Revised Protocol and the Water Sector Implementation Plan requires monitoring and evaluation. Such monitoring and evaluation would, particularly, focus on the achievement of the regional Millennium Development Goals and the SADC Water Sector targets.

The value of a monitoring and evaluation system lies in the strategic direction, comparative lessons and potential refocusing that it provides, as well as strengthening the credibility of the SADC Water Sector activities in terms of garnering support from Member States and Cooperating Partners.

## **9.2 Shared Watercourse Institutions (SWCIs)**

**9.2.1. Policy:** *Appropriate SWCIs shall be negotiated in all shared watercourses by agreement between the watercourse States.*

Cooperation in the integrated management of shared watercourses should be institutionalised through appropriate SWCIs, such as Watercourse Commissions, Water Authorities or Boards. The Protocol promotes and facilitates the establishment of SWCIs for the management of shared watercourses. The specific terms of establishment, including the roles and organisation of an SWCI, shall be specified by a formal agreement negotiated between the Watercourse States.

**9.2.2. Policy:** *A SWCI shall be established on each shared watercourse to advise and coordinate the sustainable development and equitable utilisation of the associated water resources for mutual benefit and integration*

Member States are encouraged to establish an SWCI on each of the fifteen shared watercourses in SADC, in the interests of regional cooperative and integrated management of these water resources. Every SADC Watercourse State must participate in the SWCI and every opportunity should be followed to promote the participation of all Watercourse States.

SWCI establishment does not exclude the possibility of other bi-lateral or multi-lateral water institutions for specific purposes, particularly the development and operation of joint water projects. However, these are subject to the framework provided by the watercourse States.

**9.2.3. Policy:** *The development of SWCI may be phased to enable gradual development of the cooperative arrangements and necessary institutional capacity requirements.*

A phased approach to the development of SWCIs enables gradual creation of appropriate capacity to perform functions in line with institutional growth, incremental gains in the institutional effectiveness and commensurate enhancement of the mutual understanding and trust of the Watercourse States. In this context, the development and implementation of joint monitoring policies and management strategies provides a fundamental starting point for these commissions. It is incumbent upon the respective watercourse States to ensure the viability of the SWCI.

***The role of Shared Watercourse Institutions include:***

- *Facilitate cooperative decision making about the integrated management of shared watercourses*
- *Formulating integrated water resources management strategies and basin plans outlining the development, conservation and protection of shared watercourses*
- *Developing a monitoring and information policy for the shared watercourse and coordinating its implementation.*
- *Promoting the equitable utilisation of shared watercourses*
- *Ensuring the coordinated management and response to water related disasters in shared watercourses*
- *Monitoring the execution of integrated water resource development and management plans in shared watercourse systems*

**9.2.4. Policy:** *SWCIs must efficiently and effectively fulfil the institution's responsibilities, whilst considering sustainability.*

The ownership and sustainability of SWCIs is the responsibility of the represented watercourse States. The watercourse States must ensure continuity and availability of resources to perform the functions and activities required by the founding agreement and to follow up on decisions made by the SWCI. The SWCI may execute its functions through a permanent dedicated secretariat, seconded officials of the Member States' Departments of Water, or may revolve between the Member States' delegations.

**9.2.5. Policy:** *Watercourse States are encouraged to jointly plan the development of water resources through an SWCI and to undertake the development and operation of joint water resources infrastructure on behalf of two or more countries for mutual benefit through Water Authorities or Boards.*

Water Authorities or Boards could be established by Member States to undertake joint development and operation of water resources infrastructure, as well as any ancillary functions agreed upon between the parties. There may be multiple Authorities on a shared watercourse.

**9.2.6. Policy:** *Policy and strategy level decision making within SWCIs should be through consensus between watercourse States.*

Each participating watercourse State must be represented by a delegation to the SWCI. Where the SWCI has an executive arm, the SWCI sets policy and

strategy. The SWCI executive would be responsible for implementation, either through direct management decisions or coordinating the activities of watercourse States. It is imperative that the setting of policy and strategy is through consensus, in order to ensure ownership and implementation by the watercourse States.

**9.2.7. Policy:** *All SWCIs must enable the SADC Secretariat to fulfil its coordination and guidance responsibilities in terms of the Regional Policy and Strategy and the (Revised) Protocol on Shared Watercourses.*

The SADC Secretariat is responsible for coordinating and monitoring the implementation of the Regional Policy and Strategy, the RISDP, as well as the (Revised) Protocol. In terms of the Revised Protocol, SWCIs have obligations with regard to the provision of all relevant information and documentation to the Secretariat to allow it to fulfil its mandate.

**9.2.8. Policy:** *Stakeholder participation in decision making shall be promoted by Member States and/or SWCIs.*

Stakeholder participation in the formulation of policy and strategy for the SWCI should primarily be facilitated at national level by the Member State governments. These stakeholder inputs should be presented to the SWCI by the relevant country delegations, where such delegations may include stakeholders other than government.

SWCIs should be encouraged to institutionalise multi-lateral stakeholder consultation at a joint project level, including the planning of integrated water resource strategies / plans or joint infrastructure development. Stakeholders have recourse against decisions by the SWCI through their Member State governments.

**9.2.9. Policy:** *In the interests of IWRM, SWCIs are encouraged to foster cooperative relationships with non-governmental and civil society groupings within the shared watercourse.*

In the interests of stakeholder involvement (to support participatory management), SWCIs should develop strong relationships with relevant non-government, civil society and local government bodies within the shared watercourse. This may be through the provision of support to existing bodies and/or forums or through the creation of new stakeholder forums at a national, basin and/or local level.

### **9.3 Institutional Arrangements at National Levels**

**9.3.1. Policy:** *Member States have an obligation to create an enabling institutional environment for the effective management of shared watercourses in line with the Revised Protocol and the Regional Policy and Strategy*

Member States have an obligation to ensure that the institutional arrangements - at a national level - support international cooperation within shared

watercourses, both in terms of international cooperation and the management of shared watercourses. This includes the legislative and policy framework, water resources strategy formulation, administrative and financial arrangements, stakeholder participation, and technical and infrastructural resources.

**9.3.2. Policy:** *Member States are encouraged to decentralise the management of water and the associated authority to the lowest appropriate level, while maintaining appropriate institutional arrangements for the management of shared watercourses.*

International experience indicates that the management of water resources should be decentralised to the catchment level (particularly catchment management organisations and irrigation associations), to promote efficient management, to enable effective coordination with other local sectors and to facilitate local stakeholder participation in decision making processes related to water resource development, utilisation and protection.

While many Member States have adopted this approach in legislation and/or practice, this concept of subsidiarity should be encouraged for water resources management, taking account of national conditions and constraints. However, institutional mechanisms need to be created to facilitate the coherent management of shared watercourses where catchment level institutions have been established. This includes promoting cooperation between the catchment level organisations in different Member States, and with the SWCI, as well as creating organisational components for international waters within each of the Departments of Water.

The institutions for the provision of water supply and sanitation services should cooperate with the catchment level organisations that manage water resources and should have a close relationship with the consumers they serve. This implies that they should operate at a local level

**9.3.3 Policy:** *Member States shall develop and implement appropriate institutional arrangements to enhance the participation of NGOs and civil society organisations in planning and management of water resources at national and community levels.*

In most SADC countries there are a number of local and international NGOs and civil society organisations engaged in development activities in the water sector. They provide capital investment, operation and maintenance, capacity building and community empowerment, particularly of women and poor communities. In particular, their activities impact on poverty reduction. Member States shall make appropriate institutional arrangements to engage these NGOs and civil society organisations in decision-making in water resources planning and management.

## **9.4 Monitoring and Evaluation**

**9.4.1 Policy:** *The SADC Water Sector's achievement of its development goals, objectives, strategies, programmes and institutional performance should*

*be assessed through a coherent, transparent and independent monitoring and evaluation system.*

Monitoring and evaluating the implementation of regional water initiatives is critical to the success and sustainability thereof. The monitoring system should focus particularly on the implementation of the corresponding strategy of this Regional Water Policy. Specifically, attention should focus on meeting SADC Water Sector targets specified in the Regional Indicative Strategic Plan RISDP, which at the same time embrace the Millennium Development Goals (MDGs), as well as the recommendations of the WSSD.

In particular, the value of such a monitoring system lies in the strategic direction, comparative lessons and potential refocusing that evaluation and review provides. As adjunct, it increases the credibility of SADC Water Sector activities thus garnering and/or enhancing support from Member States and Cooperating Partners.

A regional water sector monitoring and evaluation system should be coordinated by the SADC Secretariat to ensure regional consistency, but would be implemented at a number of levels, including regionally, in shared watercourses (through SWCIs where established), by Member States, and for individual projects (as part of the Water Sector Implementation Plan). It would be appropriate to link this system with other sectors within SADC to ensure a coherent monitoring and evaluation strategy and system.

## 10. STAKEHOLDER PARTICIPATION AND CAPACITY BUILDING

### 10.1 Participation and Capacity Development

*10.1.1. Policy: Water resources development and management at all levels shall be based on a participatory approach, with effective involvement of all stakeholders including the private sector, NGOs and civil society organisations.*

Historically, stakeholder participation in decision making, particularly in shared watercourses, has been limited to Government Ministries and Departments. The participation of stakeholders in decision making processes is a fundamental principle of IWRM. Stakeholder participation should therefore be encouraged at all levels within regional and national water resources development and management processes and activities. In many cases this will require a process of stakeholder mobilisation to enable and encourage them to participate. Participation shall involve Government, River Basin Organisations (RBOs), private sector, NGOs and civil society organisations.

SADC is committed - through the Treaty - to promote stakeholder consultation. However, a distinction needs to be made between the SADC Secretariat's obligations on the one hand and Member States' responsibilities in representing their countries interests in SADC structures and SWCIs on the other hand.

Water Resources development and management initiatives in the region should incorporate a direct multi-stakeholder consultation process, supported by participation of key stakeholders in decision making.

*10.1.2. Policy: All stakeholders shall be empowered to effectively participate in the development and management of water resources at international, regional, river basin, national and community levels, particularly in shared watercourses.*

Effective stakeholder participation in water resources management requires adequate capacity, knowledge, skills, awareness and attitude. Free flow of information and public awareness are fundamental to the implementation of IWRM and decentralised management of water resources (in accordance with the principle of subsidiarity). This should be promoted at all levels for the purpose of improved water resources development and management in the region. Furthermore, dialogue between stakeholder groups and water resource management institutions is required for effective empowerment of stakeholders in decision making.

Some of the stakeholders, such as poor rural communities, do not have sufficient knowledge, skills, financial capacity to engage in the consultative processes required. To ensure wider participation from a large number of stakeholders it may be necessary to provide support (empowerment) and facilitation to poor stakeholders, in terms of awareness raising, skills training, and financial provision for transport and accommodation to attend consultative

meetings. However, mandates dictate that this should primarily be done at a national level by Member States, supported where feasible by the SADC Secretariat or SWCIs.

**10.1.3 Policy:** *Member States and SWCIs shall recognize the positive role played by NGOs in water resources management, particularly at community level, and shall facilitate their participation at all levels in water development and management activities.*

NGOs are actively involved in water development and management activities at regional, national and community levels throughout the SADC region. They are particularly active at community level (rural and peri-urban areas) where they are engaged in capacity building and community empowerment in water supply and sanitation, public health, agricultural production and enhancing rural livelihoods. They play an important part in poverty eradication programmes since they often target the poor segments of society. This important role should be acknowledged and there is a need that such organisations are considered as development partners with government.

Member States should establish mechanisms, where they do not yet exist, or strengthen them (where they exist but are weak) for the effective participation of NGOs and civil society organisations in decision making in water resources development and management.

## **10.2 Gender Mainstreaming**

**10.2.1. Policy:** *Women are recognised as playing a central role in the provision, management and safeguarding of water and shall be fully involved in the development and implementation of policies, processes and activities at all levels.*

This pivotal role of women as providers and users of water and guardians of the living environment has seldom been reflected in institutional arrangements for the development and management of water resources. In recognition of their critical role, women should be included and empowered to fully participate in decision making at all levels of water resource development and management.

**10.2.2. Policy:** *All SADC water institutions shall implement the principles, goals and objectives of gender mainstreaming in their administration and implementation*

SADC has committed itself to mainstreaming gender, requiring integration of this approach as a cross-cutting issue for all sectors. The overall goal of SADC gender mainstreaming, as enshrined in the SADC Declaration on Gender, and operationalised through the RISDP, is to “facilitate the achievement of substantive equality between women and men in the SADC region, through mainstreaming gender into all national and regional policies, programmes and activities”.

The SADC declaration on Gender defines gender mainstreaming as “taking account of gender equity concerns in all policy, programme, administrative and financial activities, and in organisational procedures, thereby contributing to profound organisational transformation”.

Gender mainstreaming in water resources management can be interpreted as the incorporation of the complex relationship between productive and domestic uses of water, paying attention to the importance of participation in decision making of men and women and the equitable distribution of benefits from improved infrastructure and management structures. Guidelines on integrating gender considerations into water resources management – through all stages from project planning, implementation, and management of water resources – will be elaborated as part of the strategy formulation phase.

*The focus areas for gender mainstreaming in SADC are:*

- *Gender policy and institutional frameworks;*
- *Women’s human and legal rights, including the elimination of violence against women;*
- *Access to, and control of resources; and*
- *Access to key political and decision making positions.*

Specifically, SADC water institutions should promote gender representation and empowerment of women within their structures.

### **10.3 Capacity Building and Training**

**10.3.1. Policy:** *All water institutions in the region at various levels shall make all efforts to collaborate in developing and sharing capacity to carry out their mandate efficiently and effectively*

The region suffers from shortages and/or imbalanced distribution of material, financial and human resources. This variation in access to resources and capacitated resources directly impacts on the ability of role-players to collaborate on equal basis. Within the context of IWRM, there is a need to ensure that the traditional technical water management skills are supplemented to ensure a more holistic suite of skills. Within this context, the development of non-traditional or “soft” skills become particularly important. Such skills include competence in areas related to legal, negotiation, dispute resolution, IWRM-related technical, diplomacy, participation and social science fields. There is a need to develop the capacity of water sector professionals and institutions in the SADC region through innovative approaches. In particular, initiatives are required that will enhance the financial management capacity of water resources managers and professionals.

It is important to recognise the impact of HIV/AIDS on capacity development and institutional strengthening. The personnel and sector institutions in the water sector have not been spared the ravaging effects of HIV/AIDS (illness, deaths and the associated loss of skills and productivity within sector institutions). The water sector should, therefore, collaborate and cooperate with the health sector and other sectors in supporting measures to combat the pandemic in the region.

**10.3.2. Policy:** *IWRM and regional integration shall be promoted in water sector education and training with special emphasis on youth*

All opportunities to incorporate IWRM and regional integration should be actively encouraged and promoted wherever possible. This includes initiatives for the promotion of formal education and training programmes on the one hand and, on the other, informal training or mentoring, twinning and exchange or secondment opportunities between regional, public, non-governmental and private sector water institutions. This also relates to educational programmes within the water sector and at regional centres of excellence aimed at enhancing the concept (and practice) of regional integration.

#### **10.4 Research, Technology Development and Transfer**

**10.4.1. Policy:** *A regional perspective for effective and efficient demand-driven water sector research and technology development shall be adopted in the region.*

Research and technology development is generally fragmented and mainly geared towards addressing national issues. There is a need for these activities to address the specific challenges facing the SADC Water Sector regionally. This requires improved communication and collaboration between academic, research and scientific institutions.

It is important that research is needs driven, focuses on local solutions and appropriate technology, and follows a coherent and coordinated approach.

**10.4.2. Policy:** *Member States shall share appropriate water technology and information as a means of building capacity and integration.*

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.

## **11. FINANCING WATER RESOURCES DEVELOPMENT AND MANAGEMENT**

### **11.1 Financial Sustainability**

*11.1.1 Policy: Member States shall ensure adequate financial resources for national as well as regional projects for water resources development and management.*

The water sector has a very high potential for increasing regional and national economic development. This potential has to be recognised and the profile of the water sector raised in terms of ensuring that budgetary allocations are aligned with this reality.

Increased financial resources are needed not only for infrastructure development but also for capacity building, for institutional development as well as for research and technology development. The required financial resources may be for national projects as well as for regional projects on shared watercourses.

*11.1.2 Policy: For water resources development and management at national and regional level to be financially sustainable, Member States as well as SWCIs shall strive to recover all costs for managing the resources while taking into consideration the special requirements of the poor and the vulnerable in society.*

The promotion of cost recovery through user fees in respect of water resources development and management, to the fullest extent possible, not only leads to increased revenue for the sector institutions but also improves the efficiency of water allocation. However, the pricing must consider the special requirements of the poor and the vulnerable in society.

Cost recovery policies may be tailored to prevailing local and socio-economic conditions at national level or within a shared watercourse. Thus Member States and/or river basin organisations would develop cost recovery policies applicable to their water resources situation. For example in a country where rural water supply depends on groundwater from very deep boreholes using electric or diesel pumps, it would be unrealistic to expect the poor rural community to pay for capital investments associated with infrastructure development.

### **11.2 Cost Reduction**

*11.2.1 Policy: Member States shall institute planning and operational systems to facilitate cost reduction in the management of water resources.*

Cost reduction strategies, emphasizing optimisation of existing capacities (through rehabilitation and performance improvement), prior to the expansion of the capacity of the facility, least cost designs, and water demand management

should be seen as important measures for increasing financial resources for water resources development and management.

In order to reduce costs of infrastructure development, the principle of least-cost planning should be adopted. The least-cost approach aims to find the least expensive way of meeting a demand for water for any particular use.

### **11.3 Public-Private-Civil Partnerships**

*11.3.1 Policy: The SADC Secretariat, SWCIs and Member States should actively 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 the SADC Water Division, SWCIs and regionally based community civil societies, non-governmental organisations, as well as communities 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 watercourse level forums or networks to facilitate the involvement of these groups.

*11.3.2 Policy: Partnerships between SWCIs or governments and private sector should be considered 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 an appropriate regulatory and management frameworks so as to ensure adequate provisions for service delivery to the poor.

*11.3.3 Policy: Partnerships between SADC Water Sector, SWCIs, Member States and external development agencies shall be maintained and strengthened.*

The development of the SADC Water Sector to meet the objectives and challenges related to industrial development, food security, energy security and domestic and industrial water supply, requires a large amount of investment capital. Over the years most of the investment capital to the water sector has been provided by a number of cooperating partners including bilateral and multi-lateral development agencies. This support has been of tremendous benefit to the region and will still be required for the foreseeable future. SADC will continue its endeavours related to working with all cooperating partners in order to obtain strategic and technical support and advice as well as to leverage additional financial resources for the IWRM programme and specific projects and activities.

In addition, the SADC Secretariat should strengthen measures for donor coordination as a means for ensuring optimal allocation of external resources to programmes and projects that have been identified as being consistent with priorities within the region.

## DEFINITIONS

**Agricultural use** means use of water for irrigation purposes.

**Annual renewable water resources** means average annual flow of rivers and groundwater generated from endogenous precipitation. Annual averages disguise large seasonal, inter-annual and long term variations.

**Aquaculture** means all activities aimed at producing in restricted areas, processing and marketing aquatic plants and animals from fresh, brackish or salt waters.

**Blue water** refers to water in rivers, lakes and shallow aquifers (In the past this has received most of the attention from planners, engineers and policy makers because of its association with established forms of irrigation).

**Comparative advantage.** A country has a comparative advantage over another if, in producing a commodity, it can do so at a relatively lower opportunity cost in terms of the forgone alternative commodities that could be produced.

**Conservation** means the protection, maintenance, rehabilitation, restoration and enhancement of natural resources and includes the management of the use of natural resources to ensure the sustainability of such use.

**Cost recovery** means the extent to which users are charged for goods and/or services to generate revenue to cover the costs of provision.

**Development** is the process of improving the quality of all human lives. Important aspects of development are raising people's quality of life and living levels, creating conditions conducive to the growth of people's self-esteem and increasing people's freedom of choice.

**Domestic use** means use of water for drinking, washing, cooking, bathing, sanitation and stock watering purposes.

**Economic co-operation** means two or more countries working together to promote their common economic interests through joint projects and programmes, physical or otherwise.

**Economic good** means that water has an economic value, in addition to its environmental, social and cultural value. It is a scarce resource that is limited in quantities in comparison to the demand for the resource. Treating water as an economic good recognises that water has an opportunity cost, that it must be managed in a way that reflects its economic value for all uses and that the pricing of water will reflect the cost of provision (taking account of the needs of the poor and vulnerable).

**Economic growth** is the steady process by which the productive capacity of the economy is increased over time to bring about rising levels of national output and income.

**Economic integration** is the merging, to varying degrees, of the economies and economic policies of two or more countries in a given region.

**Environmental flow requirement** means the water that is deliberately left in the river or released from a reservoir for maintaining the structure and function of aquatic ecosystems downstream.

**Gender** refers to the socially and culturally constructed roles, privileges, responsibilities, power and influence, social relations, expectations and value of men and women, girls and boys. There are significant differences in what women and men can or cannot do in one society when compared to another. In all cultures, the roles of women and men are distinct, as are their access to productive resources and their authority to make decisions. Typically, in most cases, men are held responsible for the productive activities outside the home, while the domain of women are the reproductive and productive activities within the home. In most societies, women have limited access to income, land, credit, education as well as limited ownership and control over these resources.

**Gender mainstreaming** is defined by the United Nations as *the: process of* assessing the implications for women and men of any planned action, including legislation, policies and programmes, in any area and at different levels. It is a strategy for making women's as well as men's concerns and experiences an integral dimension in the design, implementation, monitoring and evaluation of policies and programmes, in all political, economic and societal spheres so that women and men benefit equality, and inequality is not perpetuated. The ultimate goal is to achieve gender equality.

**Green water** refers to water in unsaturated soil; it is responsible for the production of biomass that accounts for 60% of the world food production.

**Human Development Index (HDI)** is a composite index based on three indicators: longevity, as measured by life expectancy at birth; educational attainment, as measured by a combination of adult literacy (two-thirds weight) and the combined gross primary, secondary and tertiary enrolment ratio (one-third weight); and standard of living, as measured by per capita GDP (in PPP US\$).

**Industrial use** means use of water for commercial, electrical power generation, industrial, manufacturing and mining purposes.

**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.

**Management of a shared watercourse** means

- i) planning the sustainable development of a shared watercourse and providing for the implementation of any plans adopted; and
- ii) otherwise promoting the rational, equitable and optimal utilisation, protection, and control of the watercourse.

**Participatory approach** means a planning approach in which all stakeholders, and in particular the envisaged beneficiaries are part of the decision-making process.

**Policy coordination** refers to voluntary and largely unenforceable alignments of national policies and measures in particular fields.

**Policy harmonisation** refers to agreement on the manner in which each Member State will exercise or use a particular instrument over which it retains control.

**Poverty** is the situation facing those in society whose material needs are least satisfied. Inability to afford an adequate standard of consumption because of low income is referred to as **income poverty**. If, apart from low income, a country is characterised by malnutrition, poor health, low survival rates, low literacy levels, inadequate housing and living conditions, etc., then there is **human poverty**.

**Privatisation** is the sale of public assets to individuals or private business interests.

**Protocol** means an instrument of implementation of the SADC Treaty, having the same legal force as the Treaty.

**Region** means the SADC region and not any geographic or jurisdictional area at country level

**River Basin** means an area drained by a system of surface and ground waters consisting by virtue of their physical relationship a unitary whole normally flowing into a common terminus such as the sea, lake or aquifer

**SADC Common Agenda** means the set of fundamental principles and values, referred to in Article 5A of the SADC Treaty that will guide the integration agenda of the organisation.

**Secretariat** means the Secretariat of SADC established by Article 9 of the Treaty.

**Shared watercourse** means a watercourse passing through or forming the border between two or more States.

**Social good** means water as a commodity to which social value is attached, arising from the fact that water is an essential building block for life.

**Sustainable development** is a pattern of development that permits future generations to live at least as well as the current generation.

**Sustainable use** means use in a way and at a rate that does not lead to the long-term decline of natural resources.

**Watercourse** means a system of surface and ground waters consisting - by virtue of their physical relationship - a unitary whole normally flowing into a common terminus such as the sea, lake or aquifer

**Water Demand Management** means the use of price, quantitative restrictions and other devices (e.g., leakage detection and control) to control the demand for water.

---

---

**Sources of Definitions:**

1. SADC. *Revised Protocol on Shared Watercourses*
2. SADC 2003. *Regional Indicative Strategic Development Plan*
3. African Development Bank, 2000. *Policy for Integrated Water Resources Management.*
4. SADC, IUCN, SARDC, SIDA, World Bank, 2002. *Defining and Mainstreaming Environmental Sustainability in Water Resources Management in Southern Africa*