

CHAPTER FOUR

LEGAL FRAMEWORKS IN THE GOVERNANCE OF POTABLE WATER SUPPLY IN ZIMBABWE AND SOUTH AFRICA: A GLOBAL, REGIONAL AND NATIONAL OVERVIEW OF THE IWRM PARADIGM

4.0 INTRODUCTION

This chapter continues with the conceptual and evolutionary review of potable water supply governance, now with special focus on the global, SADC, Zimbabwean and South African legislation and legal frameworks. The chapter is divided into the global legal context; an overview of IWRM; the case of France; the southern Africa regional framework; the Zimbabwean framework; the South African framework; and lessons learnt from these respective examples in the governance of potable water supply. These broad areas are further divided into more focused subsections for simplicity, precision and effective discussion.

Chapter 4 is based on national legislation and policy documents, international and regional conventions and protocols, SADC publications, Internet sources, subject specific books, academic journals, aerial photos, and other available legal documents on managing water resources in general and in the study locations specifically.

4.1 THE GLOBAL LEGAL CONTEXT OF THE HUMAN RIGHT TO WATER

Legislation and legal frameworks put boundaries on the human right to water and sanitation. According to Meinzen-Dick and Nkonya (2007: 13), the way rights are defined determines whether people are included in or excluded from access to this vital resource. They further argue that the 'slippery' nature of water makes it difficult to categorise, assess and define exactly what we mean when referring to 'water rights'. This is largely because of the need for specificity: who is entitled to use how much water, from what source, when and for what purpose? All these issues increase the cost of monitoring and enforcing water laws. Water rights cannot be

established ‘once and for all’; they cannot remain static in the face of changing social and political circumstances and climatic conditions. In other words effective water rights require ‘active management of the resource and attention to many different aspects of its use, including quality and quantity, in different places and times’ (Meinzen-Dick and Nkonya, 2007: 14).

According to Meinzen-Dick and Nkonya (2007: 16-18), water rights can be broadly classified as public, common or private property. Public water rights are rights held by the state where the government allocates rights to users. Many countries adhere to some form of public trust doctrine, a principle dating back to Roman law, which maintains that the state holds water resources as common heritage for the benefit of the people. Under this doctrine, control over water is an aspect of sovereignty, which the state cannot decline to accept (Meinzen-Dick and Nkonya, 2007: 17). In Zimbabwe, for example, the water reform in the 1990s declared all the water to be the property of the state (Derman, 2008: 5). The people of Zimbabwe can acquire water rights by applying for water permits, which give them legal licence to use, but not to own water. Similarly in Mozambique, the Water Act of 1991 regards water as a ‘public good’ (Meinzen-Dick and Nkonya, 2007: 17). Residents thus cannot have private ownership of water sources but can obtain rights to use water by acquiring a water licence.

Common water rights refer to communal water rights where water can be used by people in ways that are specified by some specific community. In most African customary water laws, water from natural resources is considered community property and private ownership of such water is not recognised (Meinzen-Dick and Nkonya, 2007: 17). Private water rights are rights held by an individual or a private company. With regard to water, it is generally only rights to use that are recognised for individuals, particularly permits or licences that give an individual the right to use water in certain ways (Meinzen-Dick and Nkonya, 2007: 17).

These types of rights are contrasted with open-access situations in which everyone has unrestricted use of the resource. There are no specific rights assigned to anyone and no one is excluded from using the resource (see common pool resources in chapter 2). It is the lack of rules in open-access situations that is seen as contributing to the ‘tragedy of the commons’, whereby

resources degrade because of lack of control over their use or lack of incentives for investment in their provision (Meinzen-Dick and Nkonya, 2007: 18)

According to COHRE, AAAS, SDC and UN-HABITAT (2007: 21) the primary basis for the right to water and sanitation and for economic, social and cultural rights in general is the International Covenant on Economic, Social and Cultural Rights (ICESCR), ratified by 157 states in October 2007.

In 2002, the ICESCR adopted 'General Comment No. 15: The Right to Water'. Three years later, in 2005, the UN sub-commission on the promotion and protection of human rights produced an analysis of the legal basis and implications of the right to water and sanitation. In 2006, the sub-commission adopted 'Draft Guidelines for the Realisation of the Right to Drinking Water Supply and Sanitation'. These guidelines are consistent with General Comment No. 15, but include clearer statements defining sanitation as part of the right to water. They also focus on short-term implementation rather than on a formal definition of the right to water. General Comment No. 15 and the Sub-commission Guidelines, explain that the right to water and sanitation includes the following:

- There must be sufficient water for each person, i.e., sufficient and continuous for personal and domestic use, including drinking, personal sanitation, washing of clothes, food preparation, personal and household hygiene.
- Water must be clean, i.e., safe and free from hazardous substances that could endanger human health. Its colour, odour and taste must be acceptable to users.
- Water and sanitation must be accessible, i.e., water and sanitation services and facilities should be accessible within, or in the immediate vicinity, of each household, educational institution and workplace. These services must be available in a secure location and should address the needs of different groups. In particular there should be no threat to the physical security of women collecting water.
- Water and sanitation should be affordable. Securing water should be possible without reducing a person's capacity to acquire other essential goods and services, including food, housing, health services and education.

- The provision of water and sanitation should not be discriminatory; vulnerable and marginalised groups must not be excluded.
- There must be access to information and participation. Every policy, programme or strategy concerning water and sanitation should include, as an integral element, the right of all people to participate in decision-making processes that may affect their rights.

Table 4.1: Misconceptions on the right to water and sanitation

(Source: COHRE, AAAS, SDC and UN-HABITAT, 2008)

Misconception Clarification	Misconception Clarification
The right entitles people to free water	Water and sanitation services must be affordable for all. People are expected to contribute financially or otherwise to the extent that they are able to do so.
The right allows for unlimited use of water	The right entitles everyone to ‘sufficient’ water for personal and domestic use. Resources should, however, be used in a sustainable manner for present and future generations.
The right entitles everyone to a household connection	Water and sanitation facilities must be in, or in the immediate vicinity of the household. They may include facilities such as wells and pit latrines.
The right to water entitles people to use water resources in other countries.	People cannot claim water from other countries. However, international customary law on transboundary watercourses stipulates that such watercourses should be shared in an equitable and reasonable manner, with priority given to vital human needs.
A country is in violation of the right if not all its people have access to water and sanitation	The right requires that a state take all possible steps to maximise the use of available resources to progressively realise the right.

As outlined in the General Comment No. 15 and the Sub-commission Guidelines, the following are also particularly important components of the right to water and sanitation:

- Marginalised groups, in particular women, also have the right to determine what type of water and sanitation services they require and how to manage those services. As is the case with all consumers and stakeholders, marginalised groups should have full and equal access to information on water, sanitation and the environment.
- There must be accountability. Persons or groups denied their right to water and sanitation must have access to effective judicial or other appropriate remedies, for example courts, national ombudspersons or human right commissions.

4.1.1 A historical overview of the global context of water rights

Since time immemorial, water has played a major role in power relations and political decision making. This necessitated the need for formal policies and societal guidelines in the governance of water resources. Redelinghuys (2008: 130) observes that;

The mindset of controlling and managing water, which today still influences water policy and water-management practices, is therefore deeply imbedded in societal memory. Over time, technological advances have made the control and management of large water bodies increasingly possible. Society has progressed far beyond the building of aqueducts to relay water to the large cities in ancient history, for example, to the engineering feats of dam-building and water transfer schemes of which society is today capable.

She further observes that during the twentieth century, emphasis in policy was placed largely on satisfying increasing human demand for fresh water, without taking cognisance of the adverse effects of this practice on water availability and on the natural environmental systems that support such water resources.

Until the late 1900s, there was no clear conception in the minds of those in decision-making positions, of the gravity of society's actions on water resources. Water scarcity was dealt with by increasing the supply of water to the area of scarcity. The policy and institutional framework was geared to meeting demand and managing the allocation of water not only for domestic use but

also to the various user sectors such as the agricultural sector and industries to boost economic development. The overriding emphasis was on increasing the supply. As a result, water policy centred on satisfying humanity's rising demand although some attention was also paid to flood reduction and hydropower generation. This aligns with the technocentric spirit that characterised environmental thinking during much of the twentieth century (Redelinghuys, 2008: 130).

The 1970s saw the first international conference dedicated to water, namely the United Nations Conference on Water, held in Mar del Plata, Argentina in 1977. This conference defined water as a common good and declared the right of access to basic drinking water for all people. The main issues on the agenda were the assessment of water resources, as well as water use and efficiency (WWAP/UNESCO, 2003: 24). The Mar del Plata conference outlined the basic tenets of water rights and made water a top issue on the international political agenda.

The 1980 - 1990 decade was declared the International Drinking Water Supply and Sanitation Decade (IDWSSD) by the UN. Focus was on the provision of clean water and sanitation to every person by 1990. This goal was not achieved, and in 1990 the Global Consultation on Safe Water and Sanitation for the 1990s took place in New Delhi. An important contribution made at this congress was putting across the idea that supplying safe water and adopting adequate waste disposal methods should be a central to integrated water resource management (Redelinghuys, 2008: 135).

In 1992 the International Conference on Water and the Environment was held in Dublin. The conference, placed water on the global development agenda, dealing with a number of issues including the economic value of water, women and water, poverty and the availability of water, the resolution of conflict about water, and natural disaster awareness. The Dublin Statement on Water and Sustainable Development that emerged from the conference encompasses four basic principles on water (see 4.2.2).

The Dublin meeting paved the way for better water management based on participation and recognition of the holistic nature of water resources. It is against this background that the water

sector increasingly came to realise the importance of finding common ground in dealing with issues of growing scarcity and potential conflict over water resources.

In 1996, two NGOs working in the field of water were formed: the World Water Council (WWC) and the Global Water Partnership (GWP). Both were established through the collaboration of various UN agencies, some countries (Sweden and the Netherlands, amongst others) and certain private water corporations. The WWC's purpose was to act as a policy think tank on water issues and to create and promote a common world vision on water-related issues, while the GWP aimed to support countries in managing their water resources sustainably by encouraging public institutions and private companies to work together on water policy.

In 1997, the WWC organised the first World Water Forum in Marrakech and undertook to organise similar forums every three years from then on (Petrella, 2001). At this first forum the main focus was on drinking water and sanitation; preservation of ecosystems; gender equity on water related issues; water-use efficiency; and the management of shared water resources. The WWC was thus charged with the task of producing a global vision for water, life and the environment. Emphasis was placed on providing '... policy relevant conclusions and recommendations for action to be taken by the world's leaders to meet the needs of future generations' (WWC 2007:1).

The Second World Water Forum held in the Hague in 2000 came up with the following five recommendations for action (Hunt, 2004: 276):

- involvement of all stakeholders in integrated water management;
- moving toward full-cost pricing of all water services;
- increasing public funding for research and innovation in the public interest;
- increasing cooperation in international water basins; and
- increasing investments in water.

As put forward by Redelinguys (2008: 142) the forum at the Hague came up with the World Water Vision Document which highlighted the scarcity of the resource. Water was seen as a vital

social and economic asset. As such, water had to be brought under the market laws governing the use of other natural resources. It was further stated that the rational and efficient management of water resources required scrupulous economic culture and practice. Furthermore, since water was a primary factor in health, rational and efficient water policy should aim towards the best possible quality by investing in infrastructure and maintenance. This entailed that water policy became a financial issue, guided by access to investment and profitability (Petrella, 2001: 26).

The Vision Document did not however provide a unified vision on dealing with water issues (Redelinghuys, 2008: 143). The whole process was fraught with disagreement amongst those involved and the document that emerged, entitled 'Making Water Everybody's Business', lacked clarity. The vagueness of the document led the World Water Commission to draft its own report advocating clear action under the categories of water pricing, institutions, research, and data and investments. Another document, 'Towards Water Security, A Framework for Action', was produced by the Global Water Partnership.

The Second World Water Forum brought conflicting viewpoints to the fore. NGOs working in the fields of environment and labour took a strong position against the pro-corporate stance of the GWP and the WWC. These NGOs advocated the view that access to water, sanitation and a healthy environment were basic human rights. No resolution was accomplished, even after a meeting of the NGOs, the director of the World Water Vision Unit and leaders of the GWP. Instead, the GWP and the WWC belittled the statement made by the NGOs and accused them of being a divided group (Hunt, 2004: 278). In the end the WWC was tasked with developing a unified perspective on the conflicting issue of how to approach water scarcity in the twenty first century. Although this institution attempted to fulfil the objective of drafting a common vision, the process lacked participation and eventually the result was that the document strongly reflected the values of the WWC but lacked definite recommendations for future action (Redelinghuys, 2008: 143).

The second major development at the Second World Water Forum was the ministerial conference that ran concurrently with the water forum. This conference was organised by the Netherlands government and was responsible for compiling 'The Ministerial Declaration of the

Hague: Water Security in the Twenty-First Century (2000). In this document, the conference drew on inputs provided by the WWC, the GWP and the NGO caucus in addition to other sources and experiences from delegates (Hunt, 2004: 278). The Ministerial Declaration emphasised that neither the threats to water security, nor the attempts to address these threats were new. Discussions and actions to this end had been on-going from the Mar del Plata meeting to the Second World Water Forum and that this process was likely to continue in the future. Seven challenges and concordant actions to meet these challenges were outlined in the Ministerial Declaration. In summary the challenges included:

- access to safe and sufficient water and sanitation are basic human needs, essential to health and well being;
- enhancing food security was necessary, with specific reference to the poor and the vulnerable;
- ensuring ecosystem integrity through sustainable water resource management was crucial in achieving water security;
- promoting peaceful cooperation and developing synergies between water users at all levels, also in the case of boundary and transboundary resources was imperative;
- providing security from water related hazards was an important aspect of water security;
- water had to be managed with regard to its economic, social, environmental and cultural value, with emphasis on the pricing of water services to reflect the cost of its provision, while taking the needs of the poor and vulnerable into account; and
- good governance of water resources was essential (WWC, 2007: 1).

The Ministerial Declaration also emphasised commitment to IWRM, taking into account the social, economic and environmental factors in managing water resources. To achieve IWRM, the need was expressed for coherent national, regional and international policies that would overcome fragmentation; coherence in international water-related activity was imperative. The United Nations, multilateral institutions, international financial institutions and bodies established through intergovernmental treaties were specifically mentioned in the declaration. It was suggested that they all work towards strengthening water-related policies and programmes to achieve water security and address the challenges identified by the declaration. Also significant

was the recognition of collaboration and partnerships ranging from the individual citizen through to international organisations (WWC, 2007: 2).

The Third World Water Forum was held in Kyoto in 2003. It claimed that significant progress had been made since the previous forum and the optimistic view was expressed that through the continuation of the prevailing efforts, it was possible to meet the water challenges that the world faced (WWC, 2006: 4). Priorities set at this forum were governance, integrated water resources, gender issues related to water, pro-poor policies, financing, cooperation, capacity-building, water-use efficiency, water pollution prevention and disaster mitigation.

The Fourth World Water Forum was held in Mexico in 2006, during which emphasis shifted strongly towards implementing local actions to confront global water problems (WWC, 2006: 5). At this forum, a Ministerial Declaration was again signed by participating ministers. This declaration reaffirmed the critical nature of fresh water for all aspects of sustainable development and stressed the importance of including water and sanitation as national priorities.

Before leaving this section it should be noted that whatever the international legal and local legislative formal systems say, the local water governance legal framework is multifaceted and highly complex. WWAP/UNESCO (2003: 52) observes:

Much water governance takes place outside formalized legal systems, particularly in developing countries... Such 'traditional' rights systems form a dynamic mixture of rules, principles and organizational forms of different origins. They combine local, national and global rules and often mix indigenous, colonial and contemporary norms and rights. Important sources for these complex, local rights systems tend to be state laws, religious laws (whether formal or indigenous), ancestral laws, market laws and the rights frameworks of multiple water project interventions, which often set their own regulations. Local water rights thus exist in conditions of legal pluralism, where rules and principles of different origins and legitimization coexist and interact. In the eyes of water users in many parts of the world, legitimate water authority and water rights are not restricted to official law. Water users also clearly distinguish water rights as defined by lawyers (officially codified or recognized) from their own, living rights systems.

This summarises the situation in its entirety. A successful water governance legal system has to fit well with this template. Otherwise it would not achieve the desired goals.

4.2 AN OVERVIEW OF INTEGRATED WATER RESOURCES MANAGEMENT (IWRM)

4.2.1 Background to IWRM

Allan (2003: 10-11), argues that water resources management has passed through five paradigms over the last 200 years. These are pre-modern, industrial modern, late-modern green, economic, and finally political approaches. The first paradigm is associated with pre-modern communities with limited technical and organizational capacity. The second is that of industrial modernity, whereby the state and private sector activity boosted by developments in science and technology gave shape to the 'hydraulic mission' (i.e. harnessing water resources for human needs as typified by the era of 'big dam building' and the rapid extension of irrigation systems). This period, extending for roughly 100-150 years to about 1980, was characterised by the belief that people could control nature, and that scientific knowledge could provide exact and incontestable information for decision-making.

For Allan (2003: 11) it is only by the year 2000 that the political nature of water resources management has been acknowledged (Swatuk, 2008: 24). Allan calls his fifth water management paradigm integrated water resources management (IWRM). IWRM embodies all previous approaches, including recognition of the political nature of decisions regarding the allocation and usage of water. IWRM is defined as a holistic framework that provides wide-ranging and interpretive principles to guide the management of water resources. It recognizes that water must be considered in all its forms if it is to be managed sustainably for the benefit of all users now and in the future.

As shown in Allan's paradigms, water resources management practice has undergone changes in management approaches and principles over time. The earlier paradigms, which are still prevalent in the practice of most countries today are characterised by what scholars refer to as the hydraulic mission where extreme engineering was the order of the day. Water resources

managers and policy makers were driven to manage and supply water to people for its direct compartmentalised uses such as drinking water, agriculture, and providing power for domestic and industrial use.

According to Van Wijk-Sijbesma (2001: 15), investments for improving domestic water supplies in the rural areas of developing countries increased in the 1960s with the introduction of agency projects for drinking water services as part of national rural water supply programmes. Agency projects were development interventions that are systematically planned and executed. They are designed to attain clearly defined objectives and outputs over a specific period, at specific costs, and in a specific location. Initially, engineering interest in projects was restricted to piped water supplies. Many engineers introduced technologies that were beyond the capacities of rural populations to operate, maintain, and manage. These new systems meant total user dependency on technical and political administrators who did not empathise with water users or the problems that arose in the water services that they installed.

Van Wijk-Sijbesma (2001: 16) observes that technical advances made low-cost technologies available that communities themselves were able to manage more. However, this did not lead to community autonomy because external agencies continued to plan, build, maintain and manage the services in large blanket approach programmes. In India, handpumps brought a rapid increase in access to a better domestic water supply for the rural poor by means of close cooperation between the government, multilateral development and the private sector. When the programme was threatened because the family-type hand pumps proved unsuitable for community use and a survey found that 75% of them were out of order, UNICEF supported the modification of two NGO-designed community-type handpumps into one new and standard model (Van Wijk-Sijbesma, 2001: 16).

Van Wijk-Sijbesma (2001: 16) further observes that although newer and simpler technologies made it possible to move towards people's projects, many rural domestic water programmes continued to be fully controlled by technically oriented agencies which implement a 'blueprint' project paradigm. Community development programmes constructed simpler technologies, such as protected wells and rainwater harvesting structures. Yet these programmes had a much lower

status, coverage and financial support than the programmes of the engineering agencies (Van Wijk, 1985: 14).

According to Van Wijk-Sijbesma (2001: 21) water supply projects in Kenya had an excellent output but use of the services was low. Managed by outsiders, the projects built water points that were not accessible for all and could not compete with the sources that existed already. The concern of the projects with achieving coverage has resulted in a minimal strategy of community participation, whereby the primary users (for the most part women) were not consulted in the design of their own water supply systems. She further reports that in Tanzania a water supply project set up in 1978 and managed by expatriates had a high output but by 1987 the breakdown rate of the water points was over 50%.

When it became clearer that in the long term, supply-driven blueprint projects were not necessarily the solution, alternative paradigms were sought. The aim was to introduce government water projects that were more participatory, projects suitable for self-reliant service development, including schemes supplied by the private commercial sector and projects supported by non-governmental organisations. In many of these programmes the government still decided on the type of technology and set standard design criteria that did not allow users to make choices. However, because each community project had to lead to a self-reliant service, the users were encouraged to initiate the intervention, take part in local planning and design, and form their own water management organisations.

Autonomous community projects have not been as free from centralised influences as their supporters would like to think because they obtain their funding from central sources (Van Wijk-Sijbesma, 2001: 21). Nor do these people's projects also work when external professionals fail to recognise that theirs is not the only knowledge and that local women and men have knowledge of local conditions and processes that the professionals miss (see the Ovambo case in chapter 2).

Arguments in water management practice today are that supply-driven approaches are not sustainable. They pose a threat to natural ecosystems and the livelihood of human populations because renewable water resources continue to dwindle. Thus, as already shown in the sections

above these supply driven approaches cannot sustain the continuously growing world population. For Wolf (2006: 5), history shows that the supply driven approaches have not met project objectives, have inappropriate institutional design, and have led to environmental and economic problems.

4.2.2 Integrated water resources management: A theoretical discourse

As already shown above, IWRM is a response to the much-criticized, sector-by-sector approach to water management (irrigation, municipal, energy, etc.). It is the product of water policies in the developed countries like the United States of America, the United Kingdom, Canada, France, and Germany, among others (Mulder, 2005: 2). Concerns by environmentalists and the scientific community during the early 1990s about the deterioration of water quality (caused by human activities and industrial pollution) and the limited water resources, subsequently led to widespread support for the IWRM paradigm (Schlager and Blomquist, 2000: 3).

The IWRM assumption is that integrated water resources management ‘promotes not only cross-sectoral cooperation, but the coordinated management and development of land, water and other related resources so as to maximise the resulting social and economic benefits in an equitable manner without compromising ecosystem sustainability’ (WWAP/UNESCO, 2006: 56). The socio-economic dimension is a crucial component of the approach, taking full account of:

- stakeholders having input in the planning and management of potable water resources, ensuring especially that the interests of women and the poor are fully represented;
- the multiple uses of water and the range of people’s needs;
- integrating water plans and strategies into the national planning process and water concerns into all government policies and priorities, as well as considering the water resource implications of these actions;
- the compatibility of water-related decisions taken at a local level with a country’s national objectives; and
- the water quantity and quality needs of essential ecosystems so that they are properly protected (GWP, 2000: 13).

Cap-Net (2009: 5) sees integrated water resources management (IWRM) as a 'systematic process for the sustainable development, allocation and monitoring of water resource use in the context of social, economic and environmental objectives'. IWRM is about integrated and 'joined-up' management. It is about promoting integration across sectors, applications and groups in society and time based upon an agreed set of principles. It contrasts with the sectorial approach that leads to uncoordinated water resources development and management resulting in waste, conflict and unsustainable systems (GWP, 2000: 13).

As put forward by Mulder (2005: 30), the IWRM paradigm is characterised by the integration of society and natural resources. This refers to the active involvement of water users in water institutions at the level of clearly defined catchment areas. A catchment area is a geographical area where the surface and groundwater naturally flows into a common watercourse such as a river. Catchment demarcations help inhabitants (both human and the ecosystem) benefit from available water resources because they allow full participation of community members in the catchment decision making process. Strategic plans for the catchment should be generated from all residents. Water allocation must take the entire ecosystem's needs (human, vegetation, animals) into consideration. Catchment councils are statutory bodies created as platforms for different stakeholders to consult and collectively manage water resources in that catchment area. In Zimbabwe and South Africa, catchment boundaries straddle provincial and district borders, because they are based primarily on the major river systems rather than on political administrative boundaries.

Water, as a finite and precious resource, must be managed in such a way that it is beneficial to social welfare, economic development and ecological sustainability.

The foregoing and many other standard definitions of IWRM have four main characteristics; equity, efficiency, sustainability, and process. Thus IWRM aims at:

- promoting more equitable access to water resources and the benefits that are derived from water in order to tackle poverty;

- ensuring that scarce water is used efficiently and for the greatest benefit of the greatest number of people; and
- achieving more sustainable utilisation of water, including creating a better environment.

IWRM is also a process of moving from an existing state to some envisaged and preferred future state by achieving commonly agreed principles or best practice in managing water through the involvement of all relevant stakeholders. It is a process of implementing the Dublin Principles as outlined below;

- **Principle 1:** Fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment. Since water sustains both life and livelihoods effective management of water resources demands a holistic approach, linking social and economic development with protection of natural ecosystems. Effective management links land and water uses across the whole of a catchment area or ground water aquifer.
- **Principle 2:** Water development and management should be based on a participatory approach, involving users, planners and policy-makers at all levels. The participatory approach involves raising awareness of the importance of water among policy-makers and the general public. It means that decisions are taken at the lowest appropriate level, with full public consultation and involvement of users in the planning and implementation of water projects.
- **Principle 3:** Women play a central part in the provision, management and safeguarding of water. 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. Acceptance and implementation of this principle requires positive policies to address women's specific needs and to equip and empower women to participate at all levels in water resources programmes, including decision-making and implementation, in ways defined by them.
- **Principle 4:** Water has an economic value in all its competing uses and should be recognised as an economic good. Within this principle, it is vital to recognise first the basic right of all human beings to have access to clean water and sanitation at an affordable price. Past failure to recognise the economic value of water has led to wasteful

and environmentally damaging uses of the resource. Managing water as an economic good is an important way of achieving efficient and equitable use, and of encouraging conservation and protection of water resources.

According to Moriarty, Butterworth and Batchelor (2004: 15) the fourth principle is misunderstood in many ways in the water and sanitation sector. They argue that it is often confused with issues of cost recovery and privatization of water utilities. Yet the economic value of water and the costs of managing and supplying it are two different issues. Treating water as an economic good means trying to promote higher value uses of water. This could mean, for example, favouring industrial uses over agriculture. Or perhaps promoting higher value crops under irrigation. The highest value use of water is always domestic supply, and there are increased costs for the economy (e.g. in health) when supplies fail. Recognising the value of water use does not necessarily mean that this value should be passed on to all water users as a direct tariff. Values and charges (tariffs) are different things. Tariffs should as far as possible reflect the objectives of water resource managers, while ensuring that access by vulnerable communities for domestic or irrigation water is protected through mechanisms such as variable tariffs and targeted subsidies (Moriarty, Butterworth and Batchelor, 2004: 15).

Savenije (2002: 16) concurs thus:

Since the Dublin conference on water and the environment it has become generally accepted among water resources managers that water should be considered an economic good. However, what this entails is not all that clear. The problem is not with the terminology. It is the interpretation that causes confusion. One can distinguish two schools of thought. The first school maintains that water should be priced at its economic value. The market will then ensure that the water is allocated to its best uses. The second school interprets 'water as an economic good' to mean the process of integrated decision making on the allocation of scarce resources, which does not necessarily involve financial transactions. The latter school corresponds with the view of Colin Green (2000) who posits that economics is about "the application of reason to choice". In other words: making the right choices about the allocation and use of water resources, on the basis of an integrated analysis of all the advantages and disadvantages (costs and benefits in a broad sense) of alternative options.

Thus, one can distinguish two schools of thought on the economic value of water (Van der Zaag and Savenije, 2002: 49). The market oriented view is advocated by the World Bank (Savenije, 2002: 16). This study subscribes to the second school of thought that interprets ‘water as an economic good’ to mean the process of integrated decision making on the allocation of scarce resources. This does not necessarily imply financial transactions. In fact, the concept of water as an economic good implies that ‘decisions on the allocation and use of water should be based on a multi-sectoral, multi-interest and multi-objective analysis in a broad societal context, involving social, economic, environmental and ethical considerations’ (Savenije, 2002: 16).

Savenije (2002: 16) argues that water is not a simple economic good. It has a large number of characteristics that distinguish it from other goods. Individually, these characteristics may not be unique, but their combination makes water a special economic good. As a result, the application of regular economic theories to water resources management is not very efficient. The special characteristics include water being essential, scarce, fugitive, bulky and non-substitutable. Furthermore it is not freely tradable and is a public good bound by its location, high production and transaction costs. Selling it is difficult because its market is not homogeneous and water has high merit value (Savenije, 2002: 17). When viewed as a combination these characteristics make water a unique and highly complicated economic good. This makes Savenije (2002: 17) to conclude that water does not allow the application of market theory to its allocation between different water using categories. He further argues that within a sub-system, economic pricing may be a useful tool to reach efficiency, but allocation efficiency at that scale is only a minor problem in view of the major global issues that the water sector is facing.

According to WWAP/UNESCO (2006: 49) the Global Water Partnership has identified thirteen key IWRM change areas within overall potable water supply governance. Together these form areas together form the process of moving towards a more integrated water management approach. The key change areas are contained within a framework divided into the enabling environment, institutional roles and management instruments as outlined below.

Enabling environment:

1. Policies – setting goals for water use, protection and conservation.

2. Legislative framework – defining the rules needed to achieve policies and goals.
3. Financing and incentive structures –allocating financial resources to meet water needs.

Institutional structure:

4. Creating an organisational framework –understanding resources and needs.
5. Institutional capacity-building – developing human resources.

Management instruments

6. Water resources assessment – understanding resources and needs.
7. Plans for IWRM – combining development options, resource use and human interaction.
8. Demand management – using water more efficiently.
9. Social change instruments – encouraging a water-oriented civil society.
10. Conflict resolution – managing disputes and ensuring the sharing of water.
11. Regulatory instruments – determining equitable allocations and water use limits.
12. Economic instruments – valuing and pricing water for efficiency and equity.
13. Information management and exchange – improving knowledge for better water management.

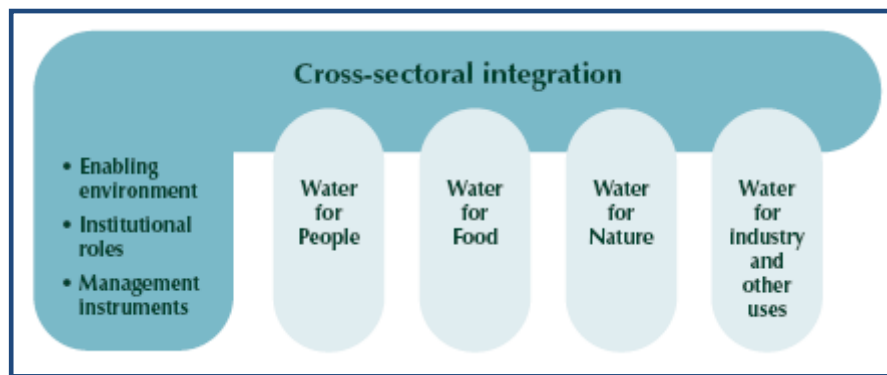


Figure 4.1: IWRM and its relation to sub-sectors
 (Source: GWP, 2000: 13).

The framework in figure 4.1 illustrates the multifaceted approach by IWRM in order to put the Dublin Principles into practice. Many of the tools in the framework are complementary, and

successful application of one tool to a given problem depends on simultaneous application of a number of other tools, as illustrated in the systems management philosophy discussed in chapter 2.

It is important to note that the integrated water resources management paradigm should not be treated as a rigid prescription. It is a broad and elastic framework that should be contextualised (Xie, 2006; Mulder, 2005; Chikozho, 2005; GWP, 2000). According to Xie (2006: 2) IWRM is a process, not a product, and it serves as a tool for assessment and programme evaluation. It does not provide a specific blueprint for a given water management problem but rather is a broad set of principles, tools, and guidelines, which must be tailored to the specific context of the country or region or river basin. GWP (2000: 11) summarises the situation as follows:

- IWRM does not have a universal blueprint;
- IWRM practices depend on context;
- integration is necessary but on its own it is not sufficient;
- well-coordinated natural and human system interaction is important;
- land and water management must be integrated;
- the distinction and importance of green water and blue water must be recognised;
- there should be integration of surface water and groundwater management;
- quantity and quality in water resources management must be integrated;
- there should be integration of upstream and downstream water-related interests;
- there must be mainstreaming of water resources; and
- cross-sectorial integration must be in accordance with national policy development.

GWP (2000: 11) and Chikozho (2005: 3) argue that there is no universal blueprint on how IWRM principles can be put into practice. The nature, character and intensity of water problems, human resources, institutional capacity, the relative strengths and characteristics of the public and private sectors, the cultural setting, natural conditions and many other factors differ greatly between countries and regions. Therefore practical implementation of approaches derived from common principles must reflect such variations in local conditions. This means that the paradigm should be used as a broad guideline within which different countries have to map out their own policies and strategies as dictated by their unique situations.

GWP (2000: 13) further reports that the concept of IWRM is widely debated. This translates into ambiguity and a whole range of different definitions. Because of this, the agreed principles for concrete action become a great challenge. Regional and national institutions must develop their own IWRM practices using the collaborative framework. In short, IWRM practices have to be contextualised.

It is further argued that integration is necessary but on its own it is not sufficient (GWP, 2000: 13). The need for integration arises when dealing with the situation of regular interaction of interdependent groups of items forming a uniform whole. Integration, then, is the art and science of blending the correct proportions of these items into a whole as discussed in the systems philosophy in chapter two. However, GWP (2000: 13) argues that integration per se cannot guarantee development of optimal strategies, plans and management schemes because the integrated ingredients may be all of poor quality. Mixing two poor ingredients does not make a good meal.

The concept of integration implies an interaction between the natural and human system. Thus, the concept of IWRM, in contrast to traditional fragmented water resources management, at its most fundamental level is as concerned with the management of water demand as with its supply (GWP, 2000: 15). As such, integration can be considered under the following two basic categories:

- the natural system, with its critical importance for resource availability and quality; and
- the human system, which fundamentally determines the resource use, waste production and pollution of the resource, and which must also set the development priorities. (GWP, 2000: 15).

Integration has to occur both within and between these categories, taking into account variability in time and space. Historically, water managers have tended to see themselves in a neutral role, managing the natural system to provide supplies to meet externally determined needs. IWRM approaches should assist them in recognising that their behaviour also affects water demands.

Clearly, consumers can only demand the product supplied, but water can be supplied with very different properties, for instance in terms of quality and availability in low flow or peak demand periods. Price and tariff design will also affect water demand, as will investments in infrastructure which translates potential into effective demand.

Emphasis is also on integration of land and water management. According to GWP (2000: 16) an integrated approach to the management of land and water takes as its departure the hydrological cycle transporting water between air, soil, vegetation, surface and groundwater sources. As a result, land use developments and vegetation cover influence the physical distribution and quality of water and must be considered in the overall planning and management of the water resources. In addition, water is a key determinant of the character and health of all ecosystems (terrestrial as well as aquatic). Therefore, water quantity and quality requirements have to be taken into account in the overall allocation of available water resources. The promotion of catchment and river basin management is an acknowledgement that these are logical planning units for IWRM from a natural system perspective. Catchment and basin level management is not only important as a means of integrating land use and water issues, but is also critical in managing the relationship between quantity and quality and between upstream and downstream water interests.

Another area of discussion is the distinction between green water and blue water. A conceptual distinction is made between water that is used directly for biomass production and lost in evaporation and transpiration (green water) and water flowing in rivers and aquifers (blue water). Terrestrial ecosystems are green water dependent, whereas aquatic ecosystems are blue water dependent. Most water management literature tends to focus on the blue water, thus neglecting rain and soil water management. GWP (2000: 16) argues that management of green water flows holds significant potential for water savings, increasing water use efficiency and the protection of vital ecosystems.

GWP (2000: 17) further observes that the hydrological cycle calls for integration between surface and groundwater management. The drop of water retained at the surface of a catchment may appear alternately as surface- and groundwater on its way downstream through the

catchment. Large proportions of the world's population depend on groundwater for water supply. The widespread use of agro-chemicals and pollution from other non-point sources already pose significant threats to groundwater quality and force managers to consider the linkages between surface- and groundwater. Groundwater pollution is frequently, for all practical purposes, irreversible over a human timescale given present technologies and the remedy costs involved.

As observed by GWP (2000: 17) water resources management entails the development of appropriate quantities of water with an adequate quality. Water quality management is thus an essential component of IWRM. The deterioration of water quality reduces the usability of the resource for downstream stakeholders. Clearly, institutions capable of integrating the quantity and quality aspects have to be promoted to influence the way human systems operate in generating, abating and disposing of waste products. This brings us to issues of upstream and downstream water related interests.

An integrated approach to water resources management entails identification of conflicts of interest between upstream and downstream stakeholders (GWP, 2000: 17). The consumptive losses upstream reduce river flows. The pollution loads discharged upstream degrade river water quality. Land use changes upstream may alter groundwater recharge and river flow seasonality. Flood control measures upstream may threaten flood-dependent livelihoods downstream. Such conflicts of interest must be considered in IWRM with full acknowledgement of the range of physical and social linkages that exist in complex systems. Recognition of downstream vulnerability to upstream activities is imperative.

It should be noted that an important stakeholder in IWRM reforms is local government, defined here as 'the lowest tier of government with juridical authority over a defined geographical area (often but not always consisting of a governing body and full-time secretariat staff)' (Nyagwambo and Smits, 2010: 2). Examples of local governments include municipalities and district councils as discussed in this thesis.

The IWRM paradigm implies that water-related developments within all economic and social sectors should be taken into account in the overall management of water resources. Thus, water

resources policy must be integrated with national economic policy, as well as with national sectoral policies. Conversely, economic and social policies need to take account of the water resource implications, for instance, national energy and food policies may have a profound impact on water resources, and vice versa. Hence, developments must be evaluated for possible impacts on, or requirements for the water resources. The development and management of water resources has an impact on the economy and society through various pathways, such as migration, settlement growth, and changes in the composition of industries. Consequently, the water resources management system must include cross-sectoral information exchange and co-ordination procedures, as well as techniques for the evaluation of individual projects with respect to their implications for the water resources in particular and society in general.

4.3 THE CASE OF FRANCE

France has been practising IWRM since its 1964 Water Law, which established river basin agencies in the country's six major river basins. According to Henocque and Andral (2003: 1), the French approach to water supply governance recognises that water has no political or administrative boundaries. Management is thus organised on the basis of natural physiographic river basins. It also cuts across sectoral considerations and involves stakeholders. Local communities, large regional developers, industrialists, farmers, water suppliers, fishermen, and conservation organisations act as partners with the government (Water Agencies) in setting policy that seeks to optimise benefits from the resources (taxes) while maintaining ecosystem integrity. The revised Water Act of 1992 led to the institution of water management master plans for the six national hydrographic basins. The aim of these master plans is to define a balanced management system of the water resource and its drainage basin to satisfy and conciliate the different uses (agriculture, fisheries, aquaculture, industry, energy production, tourism, etc) and their needs from the highlands down to the coast. As an example, the Rhone-Mediterranean-Corsica (RMC) water master plan, issued in 1996, is based on the following:

- A comprehensive environmental assessment of the state of the drainage basin presented as a series of maps published as an atlas of the Rhone-Mediterranean-Corsica (RMC) drainage basin.

- The consultations held with the different Basin Committee geographic commissions (geographic and thematic).
- The sectorial consultations conducted with the representatives of water distribution, leisure activities and fisheries, associations for nature protection, extraction activities, energy producers, industry and agriculture.
- The consultations held with concerned administrations and water technical committees;
- The technical consultations carried out with local governments (Region, Department, Municipalities).
- The political consultations held with local governments and national authorities (Interministerial Water Commission, National Water Committee) (Henocque and Andral, 2003: 2).

The French example is a result of a contextual response to both internal and external historical processes. According to Xie (2006: 9), following the Second World War, there was an economic boom in France for about 10 to 15 years. The rapid development led to a drastic deterioration of water quality and caused water stress because the water issue was nowhere a priority for agricultural and industrial sectors. Industries (paper mills, sugar industries, wine-production plants, oil refineries, etc.) covered the streams with thick scum from their discharges. Dissolved chemical and organic matter from agriculture progressively polluted the watercourses used for water supply.

At the end of the 1950s, the water planning commission realised that the deteriorating situation was such that water resources management was no longer sustainable and that the existing regulations were hopelessly inadequate to address the deteriorating water management and conservation issues. The decisive change in water management in France came with the 1964 Water Law which laid the basis for modern water resources management. Comparing the 1964 French Water Law and the 1992 Dublin Principles, there are striking similarities (See Table 4.2).

Table 4.2: Comparison of Dublin Principles and French Water Law

(Source: Xie, 2006: 10)

Dublin Principles	French Water Law	Reality
1 st . Water as a finite and vulnerable resource, essential to sustain life. Must be managed within a global framework in a river basin: soil and water	Water management is decentralised at level of large river basins. RBAs encompass territories different from those of the usual administrative units.	Led to the creation of six basin water agencies in France, corresponding to the main river systems of the country.
2 nd . Participatory approach to water management, involving users, planners and policy-makers at all levels	National Water Council (NWC) at national level, consisting of user groups, elected officials and representatives of the state; Basin Committees and Basin Water Agencies, are the executive bodies.	NWC (<100 members, 100 substitutes); six basin committees (>100 members, 100 substitutes); six basin water agencies (originally financial basin agencies), located in their own basins.
4 th . Water has an economic value in all its competing uses and should be recognised as an economic good	Water management, is facilitated by establishing an incentive financial system that complements the existing policy of repressive regulation.	Created and implemented a tax and aid system. User pays, who pollutes pays, who removes pollution is helped. Income is used to support actions of those who improve the resource.

In 1966, the government established technical missions for water provisional bodies to help set up the basin agencies. They liaised with various authorities and users, collected data for basin development plans and facilitated the establishment of the water agencies. Thereafter, in 1968, the technical missions were dissolved and were formed into basin bodies that coordinate with the central administration. Several years were required for effective establishment of the basin organisations and efficient operation. For first year of operation the basin agencies received an

exceptional allocation of funds from central government in order to have operational funds prior to collection of levies at the end of the year. After that, aid from the government diminished (Xie, 2006: 10).

The French Water Law allows the basin water agencies to levy charges on all water withdrawals and discharges, and they do not have any other financial assistance, nor do they own or operate any water facilities (Mulder, 2005: 42). Major financial decisions of the agencies have to be endorsed by the Ministry of Finance. By law, only up to 7% of the collected water fees can be used for internal administration cost (such as staffing, etc), and 93% must be used for water management purposes. To avoid imbalance, taxes and aids are subject to contracting between the agencies and users/polluters under a nation-wide standard across all basins (Xie, 2006: 10).

The French water governance institutional framework is illustrated in Figure 4.3 below.

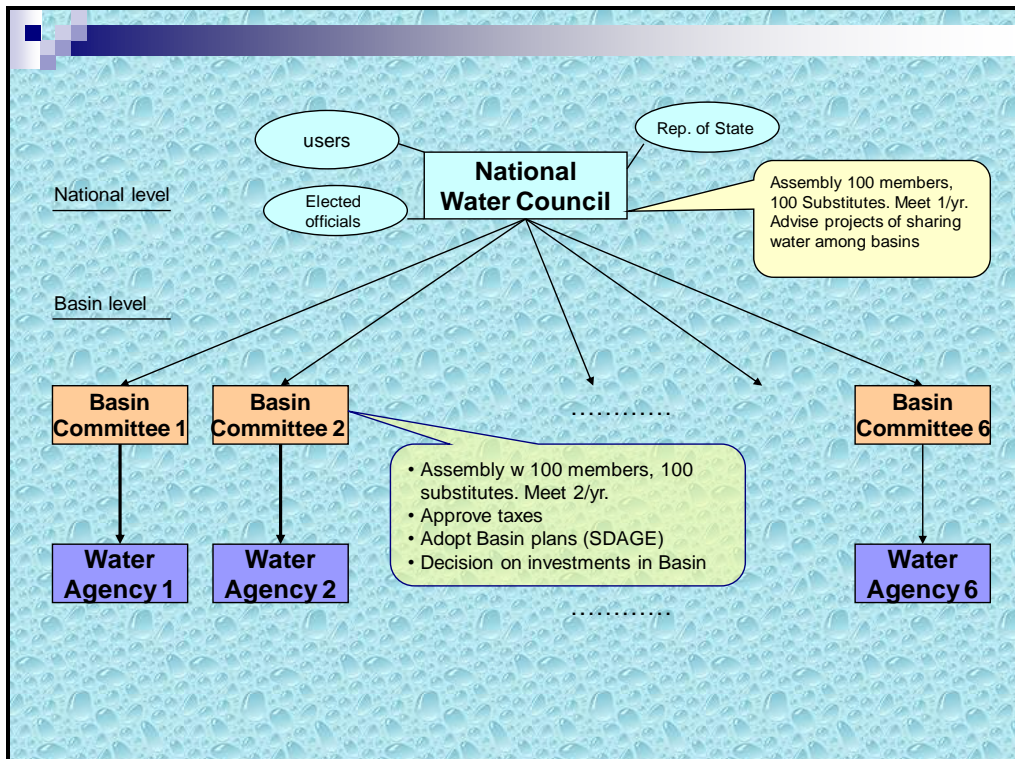


Figure 4.2: River basin management in France

(Source: Xie, 2006: 10)

Since the 1964 Water Law, French legislation on water resources governance has been constantly updated. As already observed above the revised law in 1992 set the stage for master plans for water development and management (SDAGE, update every 6 years) at large basin levels to be prepared by the basin committees with public participation, and water development schemes (SAGE) at sub-basin levels (Xie, 2006: 12). Following the passing of the European Union's (EU) 2000 Water Framework Directive, French legislation was revised in 2003 to reinforce the basin agencies and bring them in line with EU requirements, which require all inland and coastal waters of member states to reach strict water quality targets by 2015. Thus, SDAGE and SAGE have to comply with these requirements, including the urban planning code.

The French scenario is not without its own contextual and experimental problems. France has also experimented with delegating water supply services to commercial agencies some of whom grew into cartels (Clark and Mondello, 2000: 327):

Beginning in the 19th century, some of the largest French cities such as Paris, Marseille and Lyon adopted the practice of calling in private companies to make heavy infrastructure investments in exchange for the right to manage them. As a consequence, these companies gained valuable expertise in public resource management within the French governance system. Mergers, acquisitions, and failures reduced their number to three giants at the beginning of the 1980s when the delegation process became popular with municipalities. During this period, the three giants benefited from large financial resources and the most advanced technologies acquired by internal R&D and the purchase of patents. This made it possible for them to organize and protect themselves in the face of institutionalized rules and the transparency of information. They also benefited from legislation that excluded, either directly or indirectly, foreign companies from many public infrastructure investments (Clark and Mondello, 2000: 327).

As observed by Clark and Mondello (2000: 327), the problem was that municipalities lost control of the whole process. First, technologies were controlled by the cartel and the most up to date techniques became so expensive that they were beyond the budgets of the municipalities. Second, the experience in France has shown that if the municipalities originally had competent personnel for modern water management, these competencies would have been lost by the time a commercial agency's contract expired. Hiring or training the necessary personnel would thus be a costly and time-consuming exercise.

4.4 THE SOUTHERN AFRICAN REGIONAL FRAMEWORK

According to Chikozho (2005:1) almost all countries in southern Africa have instituted water reform programmes in which decentralised catchment-oriented structures, based on the IWRM paradigm, are expected to play a major role in water governance. Nevertheless, he further observes that empirical evidence from southern African countries ‘that have been implementing these reforms indicates that positive results from these reforms will be long in coming (that is, if they ever do)’. This is not surprising as even the advanced economies and pioneers of these reforms (as exemplified by the French case), took decades to accomplish a semblance of success.

For Swatuk (2008: 25) and Mäki (2008: 3), the reason for the poor performance in southern African reform efforts is largely historical. Swatuk (2008: 25) argues that the ways water has been accessed, allocated and managed throughout southern Africa reflects the troubled history of the region. Colonial masters and settlers developed water delivery and sewerage systems for small urban areas. Commercial farmers were free to use whatever groundwater they could get their hands on, and enjoyed riparian rights over surface water. Large dams were built to provide water for both commercial and domestic use in urban centres established around the region’s mines and industrial and commercial cities. Indigenous Africans were relocated to marginally productive lands where most of these people and their descendants remain today. In areas of little interest to colonialists, African resource management methods were left undisturbed and have only come to light today as they are being undermined by the regional water reform process and its emphasis on new institutions (Maganga, 2003: 3). Swatuk (2008: 34) observes that an extensive system of migrant labour has given rise to sprawling unserviced townships that still ring the cities today.

As put forward by Swatuk (2008: 37), four strategic areas in the governance of potable water, have been identified. These include potable water resource planning and management, capacity building, governance, and infrastructure development. The logic connecting these four strategic areas is that the region’s hydraulic infrastructure as currently developed was undertaken haphazardly over time to satisfy partial needs; there was limited understanding of or concern for

the overall hydrological cycle or the needs of people throughout the region (Swatuk, 2008: 30). Therefore, it is necessary to gather appropriate data, undertake skills training and implement systems of governance that ensure widespread benefits from water development, capture the resource and put it to work for broad based socio-economic development (Swatuk, 2008: 37).

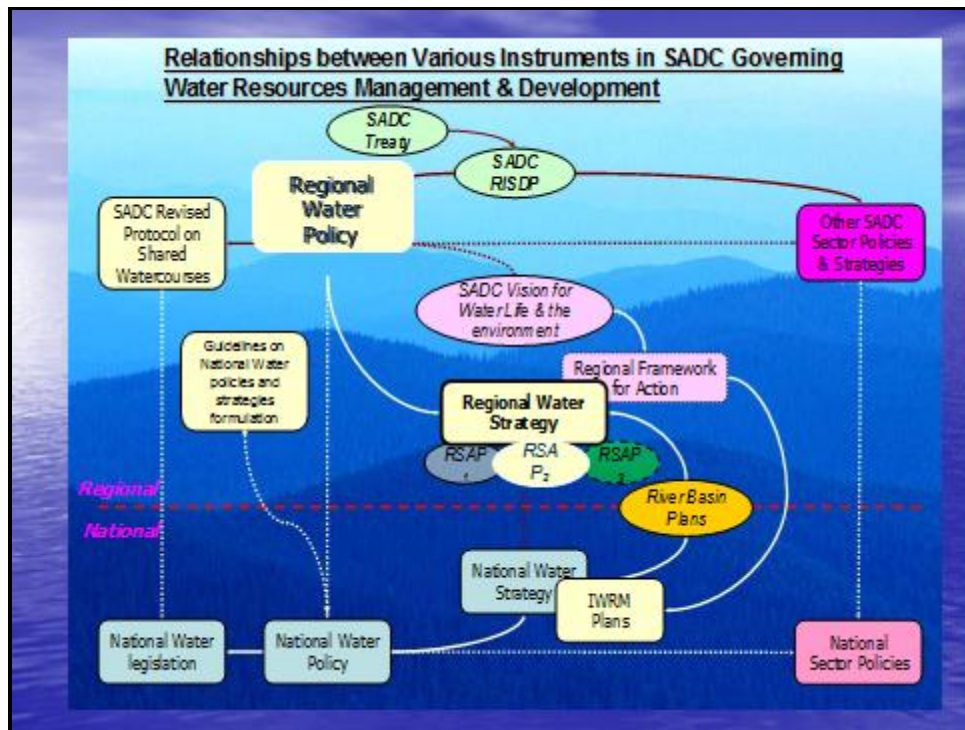


Figure 4.3: Relationships between various instruments in SADC governing water resources management and development
(Source: Ramoeli, 2007: 7)

Inclusive processes of stakeholder participation and environmental preservation are now regarded as normal conditions placed by donors on money committed to development projects and programmes (Swatuk, 2008: 39). Donor pressure for stakeholder participation, thus, remains controversial in most SADC states. Where donors have supported institutional reform at the level of the river basin, stakeholder participation has often resulted in local level resource capture by already empowered actors such as commercial farmers and non-involvement of important resource users who have secured their own bulk water supply privately or directly through the central state. There have also been local level conflicts over water resources (Tapela, 2008: 28).

Nevertheless, in line with the international policy developments, there is now general agreement among African governments that socio-economic well-being and a healthy natural environment are intertwined. Therefore, emphasis must be placed on policy options that safeguard vital natural resources such as water, while simultaneously striving to meet the development needs of the continent. Referring specifically to southern Africa, Ashton (2007: 81) remarks likewise that ‘southern Africa’s pressing need for social and economic development has prompted governments of the Southern African Development Community (SADC) countries to focus on broader issues of social equity, and resource stewardship’.

Legislative and policy reforms in the water sector have gained considerable momentum in southern Africa since the 1990s. As already observed, all countries in the SADC region are in some process of reforming their water legislation or their policies to make their countries IWRM aligned (Redelinghuys, 2008: 157). Underpinning these reforms at the national level and at the regional level are principles taken from years of consultation and discussion in international forums and conferences discussed above. Among these, legislative developments in southern Africa adhere to the Dublin Principles. Other notable factors taken into consideration in the process of reform have been equity, efficiency, sustainability, political and public acceptability, fiscal impact and health (Stein 2002: 115).

At least at the level of theory, SADC recognises the need for a holistic, integrated approach to water development and management at national and regional level and has begun to address major regional issues and constraints (SADC, 1998: 1). SADC (2005b:ii) reports that since the mid 1990s member states have engaged in wide ranging and intense consultations on development of the water sector in the region. This has brought a heightened awareness of the importance of water for socio-economic development, regional integration and poverty reduction.

There are, however, a number of institutional, technical, economic, social and environmental constraints on the effective management of the region’s water resources. These include:

- weak legal and regulatory frameworks;

- inadequate institutional capacities of national water authorities, and regional or river basin organizations;
- weak policy frameworks for sustainable development of national water resources;
- poor information acquisition, management and dissemination systems;
- low levels of awareness, education and training on economic, social, environmental and political issues related to water resources development and management;
- lack of effective public participation by all stakeholders particularly women and the poor; and
- in some cases infrastructure is inadequate and unable to meet the growing demands for service (SADC, 2005b: v).

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 (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). Nonetheless, water resources development in the region still faces many challenges including the following:

- As seen in chapter 3, there is a mismatch between water availability and demand. Areas of highest water demand happen to be in the water scarce semi-arid zones of the region and this poses a challenge in terms of the allocation of available water resources to various users, particularly with respect to transboundary water resources.
- Available water resources are highly variable. This impacts on reliability and therefore investment in storage dams, inter-basin transfers and large scale water distribution networks are necessary to ensure water security for multi-purpose uses under varying climatic and hydrological conditions.
- Shared watercourses cut across political jurisdictions and cover several countries with different socio-economic conditions. This means that complex water rights are a potential source of conflict unless managed in a coordinated and equitable manner. At the same time, shared watercourses are a potential sources of regional cooperation and economic integration.

- Widespread poverty in the region is a major drawback.
- Weak inter-sectoral linkages and coordination hampers comprehensive and integrated development.
- There is low access to safe drinking water and adequate sanitation, primarily because of inadequate infrastructure, and poor operation and maintenance of facilities.
- There are weak policy linkages at regional and national levels. At national level there are particularly weak implementation mechanisms. This means that plans at regional level do not have an effective impact at national level.
- Sharing of water allocation between watercourse states has to take account of historically uneven development of water resources requiring joint assessment, planning and understanding of resource availability and utilisation.
- Poorly developed formal dispute resolution mechanisms, particularly the delay in the establishment of the SADC tribunal have taken their toll.
- The prevalence of HIV/AIDS has brought challenges of capacity, sensitivity and other requirements to water resources management in the region (SADC, 2005: vi).

The SADC regional water policy framework is anchored by the following pronouncements which member states have formulated over the years:

- 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.
- A SADC declaration and treaty (declaration by the heads of state or government; ‘Towards the Southern African Development Community’ adopted in Windhoek, Namibia, on 17 August 1992 and the Treaty of the Southern African Development Community, which came into force on 30 September 1993);
- 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.

- The revised SADC Protocol on Shared Watercourses, which came into force in September 2003. Its 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’ (SADC, 2005b: vii).

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 to rectify historical imbalances and promote water supply for irrigation and poor communities;
- efficient use of water through demand management, conservation and reuse, 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; and
- gender mainstreaming and addressing HIV/AIDS in water resources management at all levels (SADC, 2005b: viii).

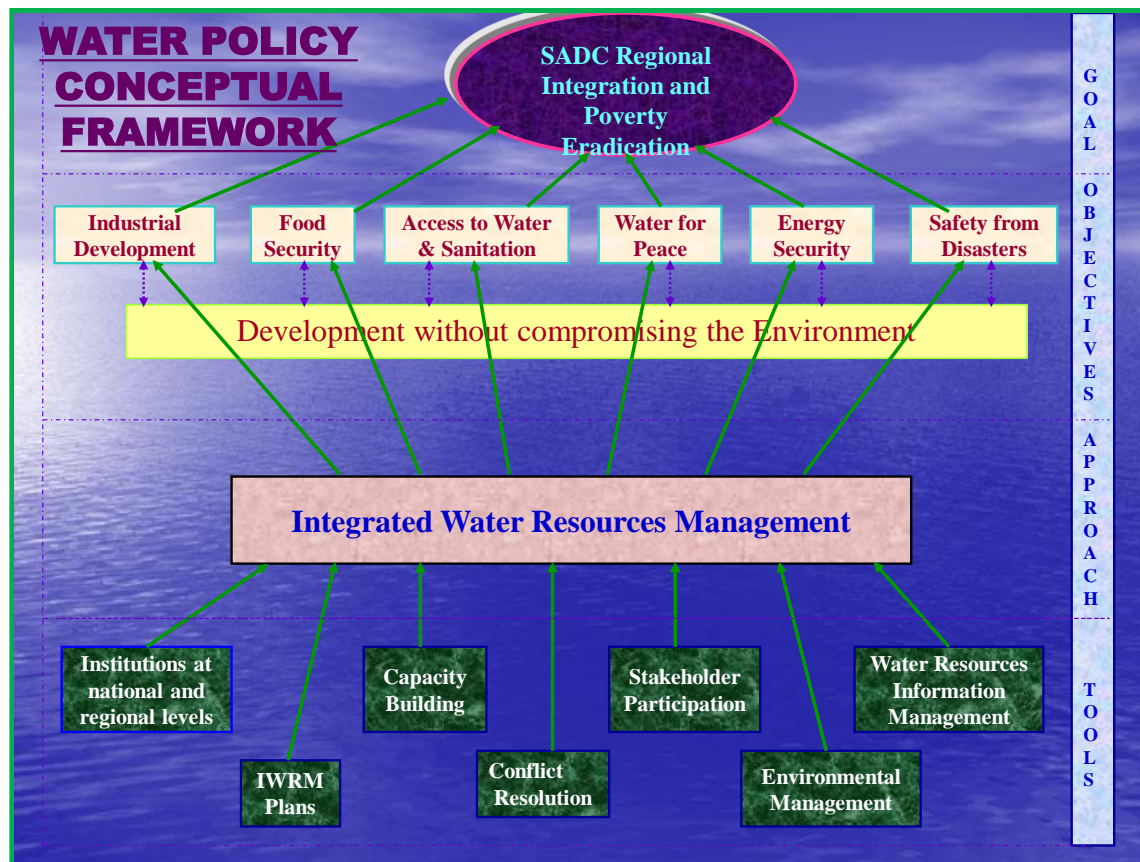


Figure 4.4: Conceptual framework for regional water policy development

(Source: SADC, 2005b: 14)

The policy has nine thematic areas which address the water resources management issues and challenges. The main policy areas are:

- regional cooperation in water resources management;
- water for development and poverty reduction;
- water for environmental sustainability;
- security from water-related disasters;
- water resources information and management;
- water resources development and management;
- regional water resources institutional framework;
- stakeholder participation and capacity building; and
- financing integrated water resources management in the region (SADC, 2005b: xi-xvii).

The major vehicle for implementing this policy is the existence of well functioning river basin organisations. The basins known as catchment areas are established on shared watercourses. They operate under sound legislation and systems for planning and stakeholder involvement embracing the IWRM principles. Member states are required to harmonise their policies with the regional water policy. There should also be closer coordination of the regional water policy with other sectoral policies, especially the major water use sectors like trade, agriculture, energy and the environment.

Nonetheless, Beukman (2002: 4) argues that while there may be logical and scientifically sound reasons for management of water at catchment management level, there are a host of practical and institutional complexities. Catchment management area boundaries do not coincide with administrative or political boundaries (see both the Zimbabwean and South African cases below). In fact the institutional water environment in southern Africa is complicated. Figure 4.7 indicates this very clearly for South Africa.

This is the regional overview picture. What exactly is happening in the country case studies?

4.5 THE ZIMBABWEAN FRAMEWORK

In the past decade, Zimbabwe, like a number of other African countries, has undergone water sector reforms. These have been driven by both international calls for more efficient and sustainable water management approaches and forces inside the country (Pazvakavambwa, 2002: 12). Before the 1998 water legislation (Water Act [Chapter 20: 24, Act No 31 of 1998]), water legislation was perceived to be inconsistent with trends in Zimbabwe. More water users were applying for water rights, yet the existing legislation was not sufficiently flexible to accommodate additional players. This was evident in highly committed areas, where almost all available water had already been allocated. The 1976 Water Act (Government of Rhodesia, Chapter 20:22) was intended to protect the interests of commercial farmers, but these constituted less than 1 percent of the country's population (Manzungu, 2002b: 19).

As observed by Swatuk (2008: 1) and the discussion on SADC as a whole, developments in water legislation in Zimbabwe are closely linked to the country's socio-political history. Between 1890 and 1980, the colonial state machinery favoured white settler political, social and economic interests at the expense of the black majority. The attainment of independence in 1980 saw the post-colonial state seeking to redress race, class and gender imbalances.

Until the 1998 revision of the Water Act (Chapter 20: 24, Act No 31 of 1998), the prevailing legislation was the Water Act of 1976 (Chapter 20: 22). According to this act, everyone was entitled to water, as long as the water was for primary use (basic human sustenance). Any use of water from which the user would derive benefit was deemed commercial use, and required a water right. All water rights were issued in Salisbury (now Harare) by the Water Court, which was based at the Administrative Court of Rhodesia (Zimbabwe).

4.5.1 Traditional water rights as basis for water rights in Zimbabwe

Derman, *et al* (2007: 250) observe that water forms part of a broad 'right to life' that underlies rural livelihoods in Zimbabwe. Thus, drinking water should be for everyone (Matondi, 2001: 175), and 'one can't deny drinking water to anyone' (Derman and Hellum, 2003: 37). This right endures despite efforts by both colonial and independent governments to redefine rural citizens' relationship to water (Derman, *et al*, 2007: 250). The idea that to deny water is to deny life indicates an undisputable truth there can be no life without water.

Empirical studies in Zimbabwe suggest that drinking water should be made available to all (Cleaver, 1995; Derman, 1998; Sithole, 1999; Matondi, 2001; Nemarundwe, 2003). Nemarundwe (2003: 108) reports from the Romwe catchment in Masvingo that drinking water is available to all regardless of the source. Available water sources include boreholes, river bed wells, rivers, wells, collector wells and dams. She writes, 'Because water is considered *hupenyu* (life), there has been no case of denying another village access to water during drought, although rules of use are enforced more stringently during drought periods' (Nemarundwe, 2003: 108). The study points to incidents where this general ideal was challenged. One example is a well owner who prevented others from accessing his well. Two days after he locked the gate to the well he found a dead dog thrown in the well. In response he unlocked the gate (Nemarundwe,

2003: 112). Thus 'water is a public resource. It is a gift from God. None of us here are rainmakers' (Chinamasa, 1998: 15).

As already argued in chapters 2 and 3, water is a common good, a gift from God. Traditionally, everyone has a free right to water in Zimbabwe. It is against this background that the Crisis in Zimbabwe Coalition (2010: 1) argues that the right to water contains both freedoms and entitlements. Freedoms include the right to maintain access to existing water supplies; and the right to be free of interference as far as this access is concerned, such as arbitrary disconnections or contamination of water supplies. Entitlements include a system of water management that provides equal opportunity for enjoyment of the right to water. Moreover, water must be adequate for human dignity, life and health (Crisis in Zimbabwe Coalition, 2010: 1).

The Crisis in Zimbabwe Coalition (2010: 1-2) identifies the following as key issues and considerations in the provision of water in Zimbabwe:

- **Availability:** The water supply for each person must be sufficient and continuous for personal and domestic uses (drinking, personal sanitation and household hygiene, washing of clothes, and food preparation).
- **Quality:** The water required for personal or domestic use must be safe, free from micro organisms and chemical substances that constitute a threat to a person's health. It should also be of an acceptable colour, odour and taste for personal and domestic use.
- **Accessibility:** Water and water facilities and services have to be accessible to everyone without discrimination. Accessibility has four overlapping dimensions as given below:
 1. **Physical accessibility:** Water, and adequate water facilities and services must be within safe physical reach for all sections of the population. Sufficient, safe and acceptable water must be accessible within, or in the immediate vicinity of each household, educational institution and workplace.
 2. **Economic accessibility:** Water and allied facilities and services must be affordable. The direct and indirect costs and charges associated with securing water must be affordable, and must not compromise or threaten the realisation of other human

- rights. Mindful of this, the government must adopt the necessary measures that may include use of a range of appropriate low cost techniques and technologies, appropriate pricing policies such as free or low cost water, and income supplements. Even in times of severe resource constraints, the vulnerable must be protected by the adoption of relatively low cost targeted programmes.
3. **Non-discrimination:** Water and water services must be accessible to all, including the most vulnerable or marginalized sections of the population without discrimination on any of the prohibited grounds. Inappropriate resource allocation can lead to discrimination that may not be overt. Care must also be taken that women are not excluded from decision making processes on water resources and entitlements. The disproportionate burden women bear in the collection of water should be alleviated. Provision of adequate water to educational institutions must be addressed as a matter of urgency.
 4. **Information accessibility:** Accessibility includes the right to seek, receive and impart information concerning water issues.

4.5.2 Water legislation in Rhodesia

Manzungu and Machiridza (2005: 6) allege that the system of water allocation in Rhodesia was based on the matrix of ideas of efficiency, modernity, white power, male supremacy and the conception of starving Africans of land and water. Campbell (2003: 10) argues that the planning mechanism of the settler state was organized around the concept of water scarcity. Politicians, agricultural extension officers, water resource managers, hydrologists, engineers, planners and economists propagated the concept of water scarcity when in reality the problem of water availability was one of democratic distribution and not availability (Manzungu and Machiridza, 2005: 6). This was re-enforced by the myth of white supremacy, backed up in law and in the allocation of resources.

Commercial farmers were seen as promoting the modern state, while communal subsistence agriculture was considered backward. Little effort was spared to make the black farmers aware of the limited rights they had (Manzungu and Machiridza, 2005: 7).

The Water Act of 1976 (Chapter 20:22) recognised three types of water, namely public water, private water and underground water. Under a 1984 amendment, the act also provided for some stakeholder participation in River Boards. The participation was, however, restricted to water right holders. The legislation also required that those who applied for water rights had to provide water measuring devices before a water right was confirmed as permanent. This explains why most water rights in the African communal areas were temporary. Most Africans in the communal areas could not afford to install the requisite measuring devices.

Some of the main weaknesses of the 1976 Water Act (Chapter 20:22) are as follows:

- All water rights were centralised at the Water Court in Harare.
- A water right was issued in perpetuity on a first-come-first-served basis. This meant that when water resources were fully allocated, no further water rights would be issued, regardless of the need.
- In the event of water shortage, the process of reallocation was very long and complex.
- A water right would not be revised, even if the right holder was not exercising his/her water rights. Water rights could only be revised if the holder volunteered to do so.
- The process of acquiring a water right was long and tortuous. Once granted, there was no requirement to pay for the possession of the water right or to contribute towards general water service provision.
- The act was silent on water quality and issues relating to the environment.
- There was little or no consideration given to groundwater supplies. The secretary of water affairs had to be informed if a deep borehole was drilled, but there was no control on the amounts of groundwater pumped from the borehole, or the number and spacing of such boreholes (Kjeldsen, *et al* 1997: 531).

Table 4.3: Main characteristics of Rhodesian water legislation between 1927 and 1980

(Source: Manzungu and Machiridza, 2005: 22-26)

1927 ACT	1947 ACT	1976 ACT
<ul style="list-style-type: none"> • Differentiation of public and private 	<ul style="list-style-type: none"> • Declared that all water other than private water was registered with 	<ul style="list-style-type: none"> • Clarified and created regulations about

<p>streams.</p> <ul style="list-style-type: none"> • Differentiation of primary, secondary and tertiary use. • Created a Water Registrar and Water Court which centralized water allocation. • Required all people using water to apply for both a water right and approval of works to a Water Registrar. • Set up a 'priority right' system for a drought year with applications given priority in order of time. • Allowed recognition of 'combined irrigation systems' with Irrigation Boards that had certain rights and responsibilities in payments of development capital. • Required registration of all dams storing over one million gallons unless for a primary right 	<p>the governor.</p> <ul style="list-style-type: none"> • Reconfirmed that water rights were attached to land and not individuals. • Private water was defined as 'that which naturally rises, falls or drains on to any land, provided such water is not naturally capable of entering any water course of natural origin'. • Defined primary use as use for humans and animals and was set at 50 gallons (~228 litres) per day per person resident irrespective of colour or race, which can be used in gardens, for waterborne sewage or other purposes. • Clarified the rights of riparian landowners: 'They have the right, without any reference to the Water Court, to impound, divert or take any public water for primary use, and this right extends to any occupier or tenant of riparian lands. They also have, otherwise than in the public interest, a prior claim over non-riparian owners to be allocated by a Water Court for irrigation or other purposes'. • Redefined priority of use as, firstly, all primary rights, then rights for irrigation purposes (based on date of issue) and then tertiary rights 	<p>groundwater use for the first time. No restrictions were placed on drilling except in underground or surface water control areas.</p> <ul style="list-style-type: none"> • Rights to use, and permits for groundwater, were linked to land. • Required dams of a certain size to be registered, and design and construction to be carried out by a registered engineer. • Required a riparian landowner intending to dam a public stream to notify all riparians downstream of the dam and contiguous to the dam. • Rescheduled water use types so that irrigation, fish farming and feedlots were registered as agricultural use.
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4.5.3 Water legislation in Zimbabwe

For almost two decades into independence water resource management continued to be governed by the 1976 Water Act (Chapter 20:22). Manzungu and Machiridza (2005: 9) argue that the

water reforms that culminated in the 1998 Water Act (Chapter 20: 24, Act No 31 of 1998) began as a knee jerk reaction to the 1991/92 drought, the worst in the country's history. The first step towards reviewing this legislation was the setting up of an inter-ministerial review committee headed by the Ministry of Lands, Agriculture and Water Development in mid-1993. The committee recommended that a new water act be put in place.

The 1998 Water Act (Chapter 20: 24, Act No 31 of 1998) was signed into law after considerable consultation with stakeholders. The new act is founded on economic efficiency, environmental sustainability and equity of use. The following are its main features:

- Water rights have been replaced with water permits which are issued for a limited period and can only be renewed subject to water availability and evidence of efficient use.
- The priority principle has been done away with.
- Water can no longer be privately owned.
- Water is to be viewed from the complete hydrological perspective; both groundwater and surface water are treated as part of one hydrological system.
- Stakeholder-driven institutions have been formed that will have more say on water allocation and general water management on a day-to-day basis.
- There is greater consideration of the environment, with environmental water use now recognized as a legitimate user.
- There is more control over pollution, with the 'polluter pays' principle being introduced.
- The state owns all surface and underground water, except for primary purposes (mainly for domestic uses such as drinking, cooking and washing), therefore any use of water needs the approval of the state.
- Water is recognised as an economic commodity; those who use water must pay for it.

The Water Act (Chapter 20: 24, Act No 31 of 1998) has decentralised the management of water to stakeholder-managed Catchment Councils and Sub-catchment Councils. A new framework for water management has been formed. Its aims are to:

- involve stakeholders in water management;

- replace water rights with water permits, which expire after a set period;
- create more efficient water allocation processes;
- develop catchment water use plans, with the full participation of stakeholders;
- treat the environment as a legitimate user; and
- form new stakeholder-driven institutions to facilitate more efficient water management.

As a result of these developments, new key institutions to manage water affairs were established. Below is an outline of the institutions formed:

- **The Zimbabwe National Water Authority (ZINWA):** formed to provide water services on a commercial basis. All fees charged for commercial water services are retained by the water authority for the provision of water services. Services of a statutory nature, provided by ZINWA are funded through the water fund, as directed by the minister responsible for water.
- **Catchment Councils:** established for the management of the seven demarcated catchment areas on the basis of major river systems in Zimbabwe, namely Gwayi, Manyame, Mazowe, Mzingwane, Runde, Sanyati and Save. A Catchment Council consists of representatives of lower-level catchment management institutions. The main responsibilities of Catchment Councils are to prepare a catchment management plan in consultation with the stakeholders for the river system, grant permits for water use, regulate and supervise water use, supervise the performance of Sub-catchment Councils and resolve conflicts within their areas of jurisdiction.
- **Sub-catchment Councils:** formed to facilitate water management on a smaller scale. Each council comprises representatives of the various water users within the Sub-catchment. Representatives from each Sub-catchment Council form the Catchment Council, thereby representing their constituents at the Sub-catchment scale. The main functions of Sub-catchment Councils are to regulate and supervise the implementation of permits, monitor water flows and use in accordance with allocations by the Catchment Council, provide representatives for the Catchment Council, promote catchment protection, monitor water discharge, assist in data collection, participate in catchment planning and collect rates and fees for all permits issued.

The theory behind the Water Act (Chapter 20: 24, Act No 31 of 1998) is commendable. Question marks that can be raised deal with implementation of the legislation.

Attorney General Patrick Chinamasa, as captured in Derman (2008: 21) summarized the Water Act (1998) thus, ‘What the existing legislation has done is that the water is the president’s water but the president then put legislation to give permission to people to exploit it and that is what is peculiarly known as the water right’.

4.5.4 Why have Zimbabwe’s water sector reforms not performed as expected?

Manzungu and Machiridza (2005: 9) observe that while the water reforms might have been partly a result of internal developments, they were largely shaped by international donors Campbell (2003: 12) concluded that the old settler-dominated river boards were somewhat reincarnated (with some black faces) as Catchment Councils that continued to wield power over water issues to the disempowerment of smallholder farmers. It should however be noted that the situation has changed since the fast track land reform programme. White commercial farmers who were active in the early stages have been replaced with a black elite. This has rendered the water reforms somewhat cosmetic (Manzungu and Machiridza, 2005: 15). Manzungu (2004: 17) further observes that the new law and institutional framework has marginalised domestic water supply aspects. He claims this on the grounds that the reforms have done little to engender involvement by some rural communities.

While the framework for a perfect water management system exists, it appears that the situation on the ground does not reflect this common belief.

Table 4.4: Typical original stakeholder representation on Sub- and Catchment Councils

(Source: Kujinga, 2002: 12)

Stakeholder	Number of representatives
Commercial Farmers’ Union (Large scale white farmers)	2 or 3
Zimbabwe Farmers’ Union (smallholder farmers)	2 or 3

Indigenous Commercial Farmers' Union	1
Forestry	1
Mining	1
Rural district council (councillors)	1 or 2
Traditional leaders	1 or 2
Urban	1
Small scale irrigators	1

The reform process has not taken off as expected owing to a combination of factors ranging from conflicting policies and weak institutional linkages, to insufficient funding. A brief outline of some of the reasons for poor performance as given by Derman, *et al* (2007: 263) follows:

- **Donor withdrawal:** The water sector reforms in Zimbabwe were largely donor-driven. Catchment Councils were not financially self-sufficient, and the sudden withdrawal of donor support (due to the deteriorating political environment) in both financial and technical areas, meant that the councils' activities were doomed to fail.
- **The land reform process:** The launching of the water reform process coincided with the land reform process in Zimbabwe. There was a great deal of movement thereafter, with established farmers moving away and new farmers coming in. This process happened so quickly that the water sector lost track of who was utilizing water. Moreover, new settlers were more interested in consolidating their claim to the new properties than in attending water management meetings. Water issues were therefore thrown aside as the land reform exercise attracted greater attention.
- **Financial stability:** The water sector reforms intended to implement the user pays and polluter pays principles. In this respect, permit holders would pay a fee, which was to contribute to water services provision. Unease ensued, resulting in many established farmers not paying for their permits, because they were uncertain about their continued occupancy on their land in the light of the new land reforms. New farmers were reluctant to pay for water use. As already discussed above, traditionally, water is believed to be a God-given resource, and therefore they felt there was no need to pay for access to it. The

diminishing contributions into the government water fund meant that there was very little money available to support water service provision and management.

- **Weak institutional linkages:** The new water act provided a better framework for stronger institutional linkages. It is now a requirement that a number of institutions be consulted before permits for water use can be issued. However, there is little evidence to prove that this is bearing fruit. Not all institutions give priority to water issues. Some continue with their previous approach to water management where their support cannot be fully guaranteed unless they are certain of deriving substantial and direct benefits from their participation.
- **Lack of capacity in key institutions:** Key institutions, especially ZINWA, are not adequately staffed to cope with the sudden demand for the provision of expert services. The staffing levels of ZINWA fall short of expected levels, as does the level of expertise. The result is that ZINWA cannot provide sufficient personnel to provide commercial services. Other key institutions, such as the Department of Natural Resources, Agricultural Research and Extension Services (AREX), the Ministry of Water and Rural Development and the Ministry of Lands and Resettlement, are also experiencing inadequate staffing levels that have a negative impact on the whole process.
- **Remuneration for participants:** Representatives on Catchment Councils and Sub-catchment Councils are not paid directly for their input into water affairs. They are only compensated for travel and subsistence. When finances became scarce, the frequency of meetings was reduced, and user groups were merged to cut down on expenses. This meant that stakeholders could not meet as often as was desirable to discuss water management issues.
- **Lack of enforcement of legislation:** The new Water Act (1998) has been described as technically sound with a solid base for sustainable and efficient utilization of water resources. However, some vital sections of the act have not been fully enforced. ZINWA is not financially viable. Key and experienced staff has left the organization owing to the working environment. Similarly, catchment outline plans (COPs) have not been developed in accordance with Section 12 of the Water Act (Chapter 20: 24, Act No 31 of 1998). COPs are to be developed by stakeholders, and should serve as a guide on water management within their catchment areas. The reasons for non-development of the COPs

range from a lack of capacity for their development, financial constraints and general lack of coordination among stakeholders. In the meantime, water permits cannot be issued in the absence of approved plans, and the objectives of the reform process cannot be fully realized.

- **Different levels of appreciation of water:** Water management representatives are from local authorities, industry, commercial farmers, communal farmers and other interested parties. While all representatives were expected to sit at the same table to discuss water affairs, it soon became clear that the priority of each group was to protect its own interests. Communal farmers were the weakest and most disadvantaged sector, with the least appreciation of water for commercial use. They were not given equal access to the resource, despite management being conducted through SCCs, which were believed to involve such vulnerable user groups.
- **Political interference:** In a bid to retain popularity, politicians aimed to keep the price of water as low as possible. Politicians frustrated the implementation of the pricing policy, which cannot afford to subsidise water service provision to maintain good water service delivery standards. Defaulters of payments for water permits were protected against disconnection through the political influence of politicians. Political influence is also a factor in project choice and implementation where development is driven by political balance rather than economics. It has been noted by Swatuk (2002: 515) that the government was adding to its expenditure on military interventions in other countries when there were no public funds available for reticulation and sanitation systems.

Thus the effectiveness of the new system has been found wanting in as far as implementation was concerned. For Manzungu (2004: 14), participation of some stakeholders has been poor, especially the rural communities, because of lack of financial resources, for example to pay bus fares to attend the meetings. He further argues that government-defined regulations for selecting stakeholders have also been a problem because they do not take into account local dynamics. Non-farm stakeholders, such as industry and urban authorities, have not been really active. The emphasis on making all water users pay for water in the spirit that water is an economic commodity, a central philosophy of the reforms, has not helped at all. According to Manzungu (2004: 10), this has conveyed the message that it is merely a revenue collecting exercise. The

provision in the Water Act (Act no 31 of 1998, Chapter 20: 24) for some people to pay reduced water charges has not been acted upon. The other problem has been a lack of adequate community knowledge about the process, worsened by the use of the English language as a medium for communication. Thus the emphasis on information dissemination rather than communication has also been a problem (Marimbe and Manzungu, 2002: 13).

Manzungu (2004: 9), reports that powerful individuals or groups have been observed sometimes to hijack the process for their own selfish benefits. In addition, the state has retained considerable influence to protect public interests (Manzungu, 2001: 3). For example the structure of the new water institutions is largely hierarchical with the state at the top (Figure 4.6). This has created problems for the new stakeholder institutions. Authority for charging various water users and for allocating water permits, for example, took more than 12 months to be put in place (Manzungu, 2004: 10). Manzungu (2004: 12) further notes that the lowest management level, the Sub-catchment Council, was too large to be effective. As a result, water user boards, which bring together group water users in a particular section of a river, have been created as a level below the Sub-catchment Council. Thus lack of adequate legal provision for participation in water resource management at the point where water is used became another problem.

Furthermore, spatial and jurisdictional boundaries of the new water institutions remain a thorny issue (Beukman, 2002: 4). As put forward by Manzungu (2004: 11), some of the problems have to do with the fact that communities owe allegiance to their traditional institutions and district and provincial administrative boundaries, which do not necessarily follow catchment lines. He further observes that the hydrologically defined boundaries have tended to split communities. Therefore, clear-cut jurisdictional responsibilities between the catchment and sub-catchment councils, water user boards water point committees and rural district councils, still need to be clarified.

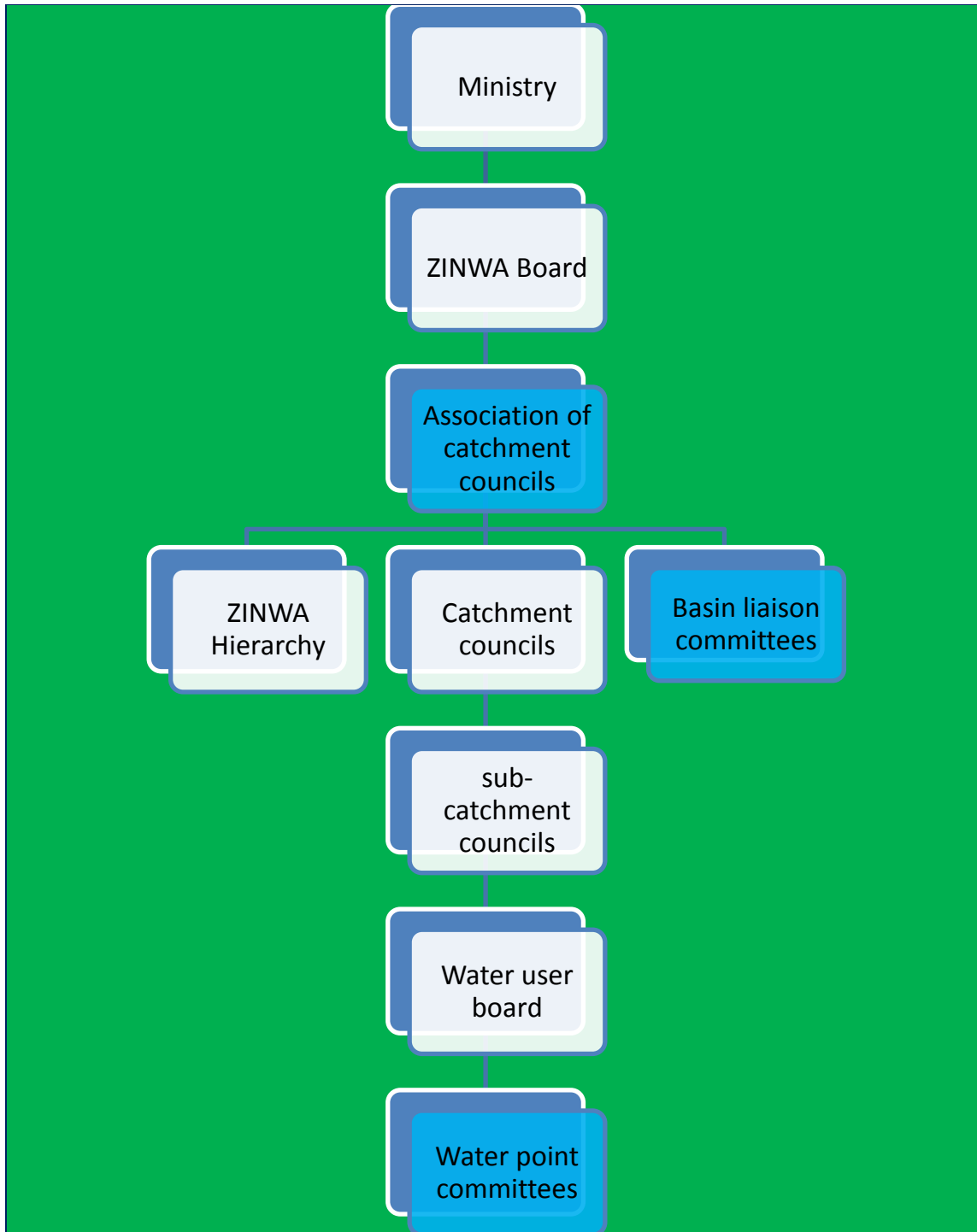


Figure 4.5: Existing and proposed stakeholder institutions in water resources management in Zimbabwe

[Clear boxes represent the existing situation; shaded boxes represent the proposed situation]

(Source; Manzungu, 2004: 15)

As in the South African case below, potable water governance issues are littered over a plethora of pieces of legislation, ministries and other administrative institutions. Thus, Chinamora (2002: 53) observes that environmental and potable water legislation in Zimbabwe is seriously fragmented and bedevilled by lack of coordination and uniformity in areas of responsibility. As a result there is a considerable overlap of institutional mandates. For example, the Natural Resources Act (Chapter 20:13 of 1941), now repealed and replaced by the Environmental Management Act (Chapter 20:27, Act No 13 of 2002) provides, among other things, for the construction of works to prevent soil erosion and promote the conservation of soil and water resources. And as observed by Patel (2002: 16), with reference to water development and usage, it reflects several potential conflicts of an administrative nature vis-à-vis the provisions of the Water Act (Chapter 20: 24, Act No 31 of 1998).

As already discussed above, the national political environment has also affected the process. The fast track land reform programme that began in July 2000, with its disregard for rules and regulations, has reversed some of the gains of the water reforms and stakeholder institutions.

Another important issue is the use of pilot projects. Unlike South Africa (as will be seen below) Zimbabwe only used the pilot concept before the institutions were established, and then proceeded to establish the institutions all at once (Manzungu, 2004: 12). South Africa used pilots before and after legislation was adopted.

4.6 THE SOUTH AFRICAN FRAMEWORK

As in the colonial Rhodesian regime discussed above, there were huge inequalities between blacks and whites with regard to access to land and water in the apartheid regime of South Africa. The apartheid regime created reserves that came to be known as ‘homelands’ or ‘Bantustans’ for black people, depriving them not only of freehold title but also of their dignity (Van Koppen *et al.* 2002: 7). Movik (2009: 6) reports that:

The inequalities still prevail, reflecting the extent of overcrowding and land deprivation resulting from the apartheid policy. There are even greater inequalities in access to water. As much as 95 per cent of irrigation water is

consumed by predominantly white, large-scale farmers, with the remaining 5 per cent accessible to smallholders, mainly blacks.

The situation in South Africa at the end of the apartheid regime in 1994 is captured by Minister Kader Asmal in the introduction to the White Paper (DWAF, 1997:2):

South Africa's water law comes out of a history of conquest and expansion. The colonial law-makers tried to use the rules of the well-watered colonizing countries of Europe in the dry and variable climate of Southern Africa. They harnessed the law, and the water, in the interests of a dominant class and group which had privileged access to land and economic power. It is for this reason that the new Government has been confronted with a situation in which not only have the majority of South Africa's people been excluded from the land, but they have been denied either direct access to water for productive use or access to the benefits from the use of the nation's water. The victory of our democracy now demands that national water use policy and the water law be reviewed. Our Constitution demands this review, on the basis of fairness and equity, values which are enshrined as cornerstones of our new society.

Thus in 1998, South Africa ratified the National Water Act (Republic of South Africa, Act No. 36 of 1998), which explicitly emphasises equity as being the primary objective for instituting a water use rights reform. Importantly this act introduces the concept of the Reserve, which refers to both an ecological reserve in terms of retaining a minimum level of in-stream flow to ensure ecosystem sustainability, and that of a human reserve, which refers to the quantity of water necessary to meet basic human needs (Movik, 2009: 6). The National Water Act (Republic of South Africa, Act No. 36 of 1998) goes on to categorise water uses into:

- Schedule One uses, which include water used for domestic purposes such as drinking, washing, watering livestock and home-gardening;
- General Authorisations (non-transferable) uses, which covers water use in specific geographical areas or for particular purposes that are deemed to have a low impact;
- Existing Lawful Uses (ELUs) which refers to those uses that were actively taking place within two years of the 1998 Act being promulgated, and were recognised as lawful under the previous legislation; and
- water use licences, which cover all other uses.

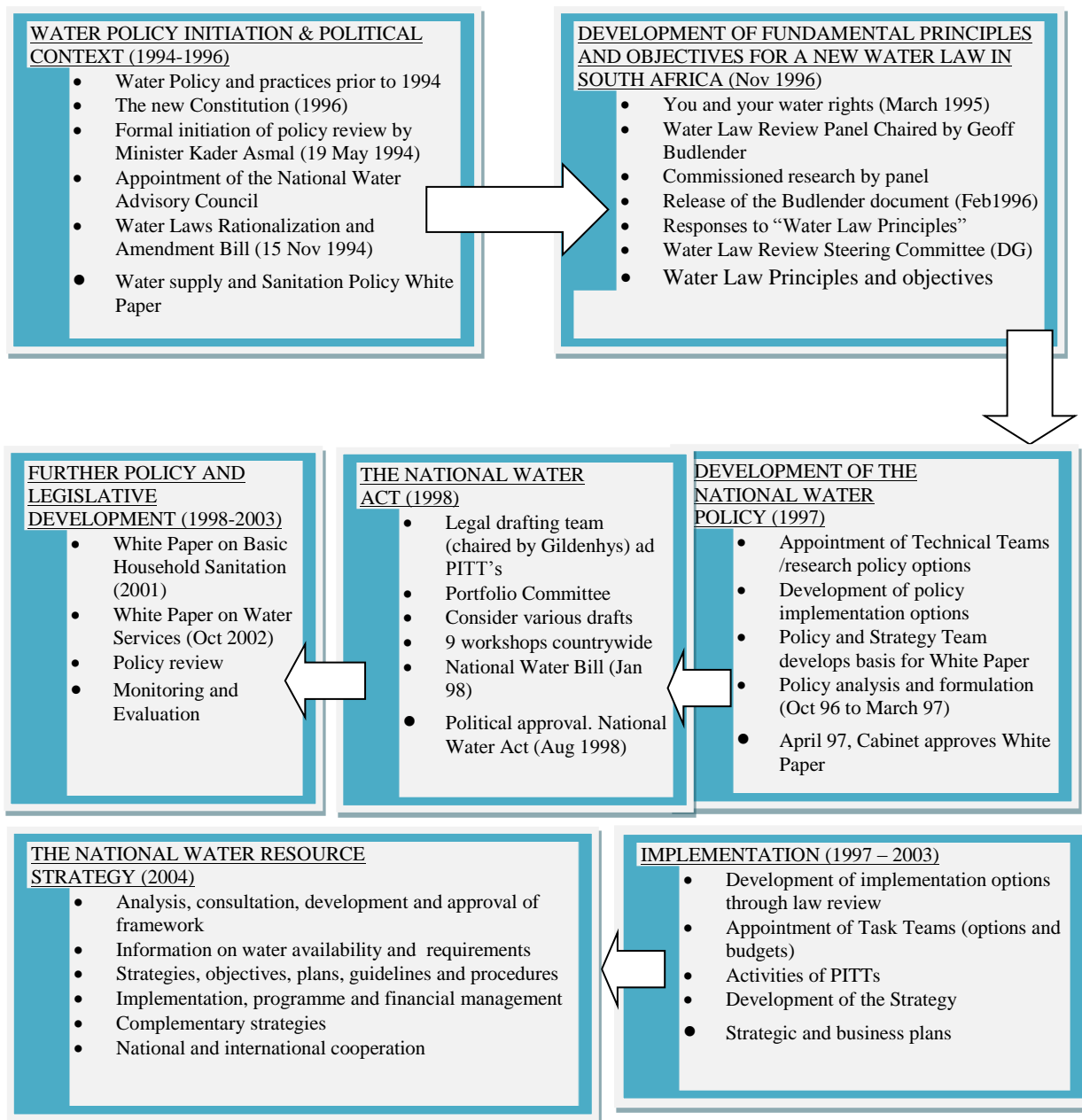


Figure 4.6: Major phases and activities in the South African water policy process (1994-2004)

(Source: De Coning and Sherwill, 2004: 14)

All water use must be registered in a national database, the Water Authorisation and Registration Management System (WARMS). What constitutes ‘use’ is also defined in terms of the nature of the use, and divided into 11 categories, including taking water from a water resource, storing

water, impeding or diverting the flow of water in a watercourse, and engaging in stream flow reduction activities (Movik, 2009: 7).

As in the case of Zimbabwe above, in terms of management, South Africa was partitioned into 19 water management areas (WMAs), based more or less on drainage regions that were to be governed by a Catchment Management Agency (CMA). The purpose of the CMA was first and foremost outlined as ‘coordinating and promoting public participation in water management’ (Anderson 2005: 1)), although it was envisaged that these responsibilities could be expanded to include setting and collecting water use charges and issuing water use licences (Schreiner and Van Koppen 2002: 969). Moreover, the National Water Act (Republic of South Africa, Act No. 36 of 1998) outlines the development of a national water resources strategy as the overarching instrument for managing national water resources. Its purpose is to ‘set out the strategies, objectives, plans, guidelines and procedures of the minister and institutional arrangements relating to the protection, use, development, conservation, management and control of water resources’ (DWA 2004b: 8).

According to Movik (2009: 9), the National Water Act (Republic of South Africa, Act No. 36 of 1998) represented a significant departure from the previous 1912 Irrigation Act and the 1956 Water Act that both rested on the principle of riparianism. Riparianism essentially held that only those owning land adjacent to rivers were entitled to make use of a ‘reasonable’ amount of river water. Water use rights were therefore dependent on land ownership, and all landowners along a stretch of river would have to cooperate to ensure that no one infringed on another’s right to enjoy his or her entitlement to ‘reasonable use of water’. However, there is no definition or measurement of ‘reasonable’ water use. Does reasonable use extend to community gardens and livestock watering? At what level does water use cease to be reasonable?

The National Water Act (Republic of South Africa, Act No. 36 of 1998) acknowledges that water is scarce and unevenly distributed in South Africa, that it belongs to all in South Africa, and that national government is responsible for the allocation and distribution of water.

According to Naidoo, *et al* (2009: 7), the ultimate aim of the National Water Act (1998) is the protection of water resources for the sustainable use of water by all. One of the guiding principles of the Act recognises the need to promote social and economic development through the use of water. For Naidoo, *et al* (2009: 5), this takes into account, amongst other issues, the following aspects, which directly support the provision of water for small-scale multiple uses:

- promoting equitable access to water;
- redressing the results of past racial and gender discrimination;
- promoting the efficient, sustainable and beneficial use of water in the public interest;
- facilitating social and economic development; and
- providing for the growing demand for water use.

As put forward by Malzbender, *et al.* (2009, iii), in South Africa, the Constitution plays a major role in the governance of portable water resources. The 1996 Constitution:

assigns to local government the executive authority and right to administer the functional area of ‘water and sanitation services limited to potable water supply systems and domestic waste-water and sewage disposal systems’. The legislative competence over this functional area is however vested concurrently in the national and provincial spheres of government. The Constitution also places an obligation on national government to take legislative and other measures to support and strengthen the capacity of municipalities to manage their own affairs, to exercise their powers and to perform their functions. Conversely, national government may not impede a municipality’s ability or right to exercise its powers or perform its functions. Provincial government has supervision over local government which includes power to intervene in prescribed circumstances (Malzbender, *et al*, 2009: iii).

At this juncture it is important to note that, as in the case of Zimbabwe, in South Africa, it has proven a complex task to address cooperative governance between the national, provincial and local spheres of government (Beukman, 2002: 4). The geographical and institutional boundaries of water management bodies by and large follow hydrological boundaries. In all cases these are fixed by the state. This tends to create problems at the local level as reported on the Zimbabwean case (Latham, 2002: 910). Beukman (2002: 7) further observes that the complex situation requires innovation and commitment on behalf of all levels of government, to discover how the

catchment-agencies are integrated into development strategies and actions, across the different boundaries. Frost (2001: 51) suggests that less attention has been paid to how integration is to be achieved among actors that have scale-dependent perceptions and interests, and whose actions are likewise scale-specific. For Beukman (2002: 8), despite the fact that South Africa is perceived to be more advanced than many of the other southern African states, such an institutional environment is still inappropriate and ineffective for the country.

It is also significant that South Africa used pilots before and after the 1998 legislation was adopted. The Olifants River Basin was a pilot catchment before the promulgation of the National Water Act (Republic of South Africa, Act No. 36 of 1998), with the Inkomati River Basin being adopted afterwards (Manzungu 2004: 8). Other basins in South Africa are at various stages in a process that was expected to last 15 years (Manzungu, 2004: 8). This is a progressive approach where the aim is to proceed cautiously, building upon earlier experience. The problem with this approach is that it may take too long and concentrate influence in powerful stakeholders, given its voluntary nature whereby stakeholders are free to determine the pace of reform (Manzungu, 2004: 9). In addition to the 1996 Constitution and the National Water Act (1998), as in the case of Zimbabwe, there are also many other legislation stipulations that deal with water governance in South Africa. An outline of three of these pieces of legislation follows.

The Water Services Act No 108 of 1997 focuses on ensuring the right of access to a basic water supply and basic sanitation. The minimum standard for a basic water supply is stipulated in terms of quantity. The Act also acknowledges that proper operation and maintenance of infrastructure, and sound health and hygiene practices complement the provision of water supply services in improving people's health. It goes on to state that access to a basic water supply and sanitation is a right, and that water services authorities must provide the means to realise these rights. Furthermore, the responsibility for water supply systems, domestic wastewater and sewage disposal lies with local government. National government should provide support and capacitate the local municipalities. According to the Water Services Act (1997), water service providers may not deny people access to basic water services because of non-payment if they can prove that they are unable to pay for such services.

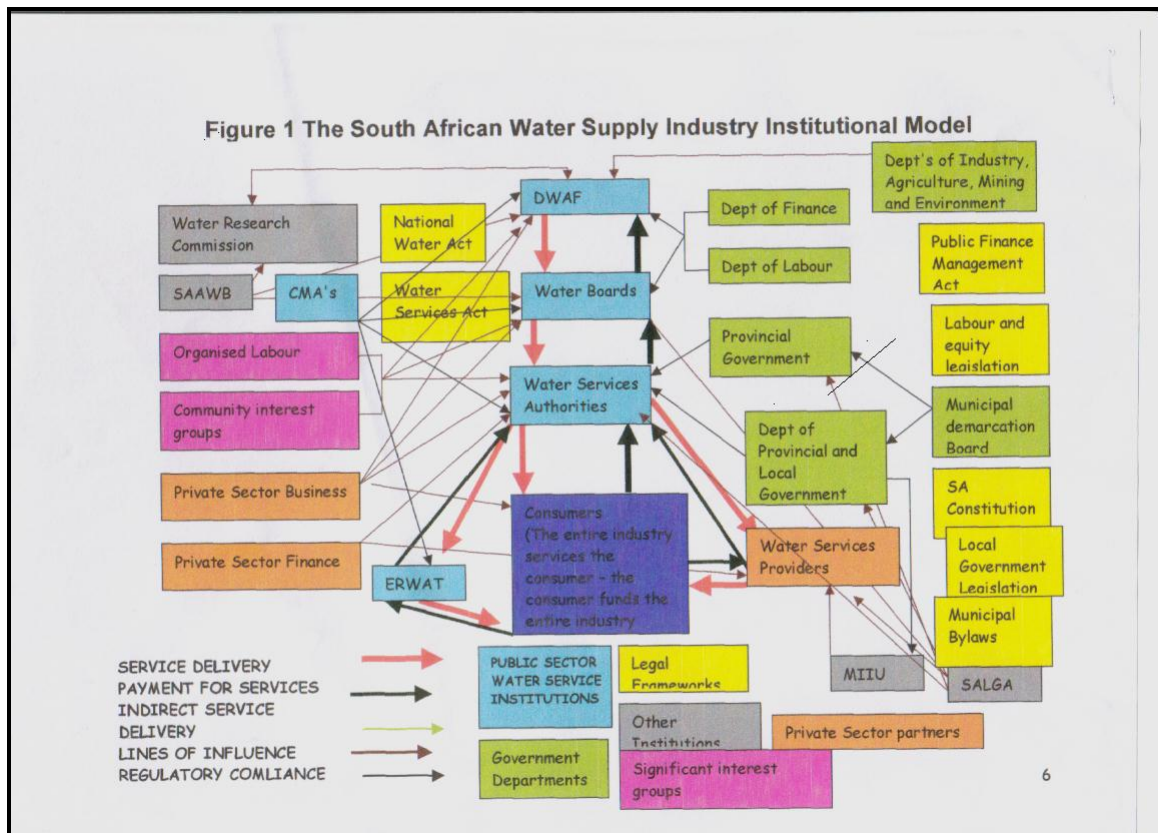


Figure 4.7: South African water supply industry institutional model
(Beukman, 2002: 5)

The Municipal Structures Act (Republic of South Africa, Act No 118 of 1998) defines Water Services Authorities (WSAs) as any municipality that has the executive authority to provide water services within its area of jurisdiction. WSAs may be metropolitan, district or authorised local municipalities, and are primarily responsible for ensuring the provision of water services. WSAs must ensure that all people in their jurisdiction are progressively provided with at least basic water services. According to the Municipal Structures Act, the district authority is responsible for service delivery in areas where the capacity does not exist at the local level, especially in rural areas. Because of the many role players and the network of responsibilities each has, there is some level of confusion about who is responsible for water services in the different sectors and communities (Naidoo, 2009: 12).

The Municipal Systems Act (Republic of South Africa, Act No 32 of 2000) provides an environment for integrated planning, through the establishment of municipal Integrated

Development Plans (IDPs), which are integral to the planning, design and implementation of productive use systems (Naidoo, 2009: 12).

4.7 LESSONS FROM THE ABOVE EXPERIENCES

It has already been noted that the IWRM paradigm was largely a product of water policies in the developed countries like the USA, the UK, Canada, France, Germany and Australia. The experiences of these countries do not only act as benchmarks for others, but as in the French case above, they are lessons for the road ahead of all other countries that are busy implementing new policies in line with the demands of the IWRM paradigm in the governance of water resources. What exactly can be learnt from the experiences of France, southern Africa, and other countries that have adopted the IWRM paradigm in the governance of water resources?

IWRM implies a systematic and coherent approach to resource use. However, as observed by Swatuk (2008: 1), achieving any of its normative goals has proved exceedingly difficult, and has led many scholars toward a re-evaluation of its assumptions and methods. This scenario is well pronounced in southern Africa where the main challenges are described as political (Swatuk, 2008: 1). Furthermore, the discourse on IWRM in southern Africa has revealed several points of contention, including stakeholder participation, water as an economic commodity, water as a holistic resource, the river basin as the unit of management, and infrastructure development (Gumbo and Van der Zaag, 2002: 3; Swatuk, 2005: 873). These issues are not individually resolvable because together they reflect actors' understanding of 'what water is, who should have access to it, for what purpose, and how decisions regarding allocation, use and management of potable water supply are made' (Swatuk, 2008: 2).

As already observed above, the Dublin Principle no. 4 is the most contentious principle of the four principles, especially considering that there is no agreement on its meaning. Elitists would interpret it as merely implying cost recovery, but scholars who sympathise with the grassroots or communal societies interpret it as referring to the importance of water for human life and community development. This has brought ambiguity and confusion, especially in poverty stricken communities of southern Africa. If the concept is taken to mean full cost recovery, then

most people in rural communities in southern Africa would not be able to afford it and would thus be denied access to potable water, as in the case of a woman in Lutsheko, a village in South Africa, as reported by Kasrils (2001: 51):

Last year, I visited a newly installed water supply scheme in a typical South African rural village called Lutsheko. Communal taps had been installed within 200 metres of every household, the reservoir fed by a diesel pump taking water from a nearby borehole. Households were contributing R10 a month (under 5 US cents per day) to cover the operating costs. The project was well run by a village water committee and had improved the lives of 3000 people.

Afterwards, I went down to see the borehole on the banks of a dried out riverbed. There I found a young woman, with a three week old baby on her back, scooping water out of a hole she had dug in the riverbed. When I asked her why she was not using the taps, she told me she could not afford to do so. For those living in deep poverty, a US nickel is just too much to spend on a day's supply of clean water

Kasrils (2001: 52) further reports the findings of a South African survey that established that many poor rural women in South Africa feel that to spend R10 on clean water would be to deprive their children of food. So they choose to search for free, unsafe water instead (see Figure 3.4). The plight of these poor women is a great challenge to both policy makers and communities in southern Africa. Water is of great value to them just as it is elsewhere, but cost recovery should not be applicable to them. In fact water is a basic requirement which people cannot do without. It therefore follows that it must be readily available to ensure continuity of life.

Manzungu (2004: 16-19) summarises the applicability of the IWRM theoretical framework in southern Africa and highlights some important issues as follows:

- Improved governance, rather than stakeholder participation, should be the indicator of democratisation in water resource management.
- Water practitioners should be conscious of the fact that effective stakeholder participation depends on a conducive governance regime at the national level, which lies outside their purview.

- Uncritical adoption of the neoliberal concept of beneficial use of water, where water that is being productively used cannot be re-allocated without extreme difficulty, tends to forestall what is essentially a political process.
- Related to the previous point, stakeholder participation without significant restructuring of ownership and access rights, runs the risk of tokenism.

He further observes that there are also practical issues to consider for stakeholder participation and improved water supply governance to occur. These include the process and approach taken, stakeholder definition and how it is operationalised, entry and levels of participation, and administrative and operational realities.

The first lesson, as outlined by Manzungu (2004: 16) and Xie (2006: 13), is that a broad base of support is needed for the wide ranging reform process. The changes required by IWRM can sometimes be revolutionary, and involve drastic modifications of the current ways of doing business. As such they run the risk of opposition from those interest groups who benefit from the status quo. Therefore, not only top-level political commitment is required; a broad base of popular support is necessary for any large-scale changes to take place. Factors that may trigger demand for water reforms range from financial straits in government agencies, water scarcity and droughts, natural disasters, water quality and/ pollution crises, to the dissatisfaction of users about inadequate water services. Initial reform should therefore target areas where there is the greatest need. Ultimately, however, all affected stakeholders must be convinced of the value of IWRM and its reform process. Stakeholder consultations that give voice to all concerned and that provide clear justifications for reforms, backed up with solid data, can help build support for IWRM (Xie, 2006: 13).

Xie (2006: 14) refers to what he calls ‘pick the low-hanging fruit’. By this he means that the sustainability of the IWRM process depends on the ability to demonstrate on-the-ground benefits. When prioritizing a list of reforms it is important to first target those areas that will quickly and easily demonstrate the success of IWRM policies and practices; the areas that can easily build political support for the overall process. The political pressures faced by most

decision-makers discourage risk-taking behaviour, so there should be immediate rewards to promote the implementation of the large-scale changes required by IWRM.

Another important lesson is the significance of contextual factors. Chikozho (2008: 42), Manzungu (2004: 18) and Xie (2006: 13) argue that while the IWRM principles provide general directions, the institutional context of a given water management problem must dictate the specific approach used. For example, treating water as an economic commodity and achieving full economic sustainability may not be possible if supply infrastructure requires expensive rehabilitation or if beneficiaries of water services are unwilling or unable to pay full-cost tariffs (see the case of the woman in Lutsheko above). Numerous gradual steps must therefore be taken to break the vicious cycle of poor water service delivery and reluctance (or inability) to pay, involving loans for rehabilitation, targeted subsidies, institutional reform to remove political influence, formation of user associations and capacity-building, improved stakeholder consultation and participatory management, and private sector participation (Xie, 2006: 13). He further argues that even countries with similar water management problems have vastly different institutional capacities. Therefore each country's IWRM approach must focus on building on existing strengths and addressing weaknesses. There is no one magic solution that fixes all problems.

The French experience above shows that implementation of IWRM is a process that could take several decades. According to Xie (2006: 12) France took nearly 30 years to reach today's stage of river basin management, while it took Spain more than 20 years to implement IWRM. Success in some areas may be accompanied by on-going challenges in others. Certain goals such as full economic sustainability and reconciling human water needs with the needs of ecosystems, will require substantial changes to current practice and culture, and will therefore take even longer to achieve. Given the short-term focus of politicians and policymakers in most areas, there is always the temptation to seek quick solutions and abandon the IWRM process if immediate gains fall short of expectations. For example, Zimbabwe embraced IWRM in the late 1990s with great enthusiasm, only to throw away the zeal when the ruling party governance monopoly was threatened by the Movement for Democratic Change (MDC) at the beginning of the twenty first century. Persistent, patient progress on multiple fronts is necessary to achieve the

ultimate goals of IWRM. It is important to develop a sequenced, prioritized list of reforms to avoid getting bogged down in partial implementation of too many reforms.

Commenting on the implementation of IWRM in southern Africa, Chikozho (2005: 2) observes:

There are tensions between establishing best practice approaches on the one hand and, on the other, adapting them to specific contexts. There are questions about the significance of scale in determining what can and what cannot work. There are also tensions between emphasis on form and process in catchment management. There are tensions between more centralised catchment governance, and more participatory, decentralized approaches. There is a tension between catchment thinking and other narrower orientations to issues such as meeting the backlog of water supply demands... The similarity and standardization of the prescriptions across different countries is undeniable. It is, however, inconceivable that the 'one size fits all' approach to the policy-making associated with these reforms will bear positive results, considering their obvious disregard for the prevailing social, cultural and institutional contexts in most of the countries involved.

As already observed above, the argument is that the IWRM paradigm can only work when contextualised to the dictates of concerned communities' immediate environment in a systems management perspective as discussed in chapter 2. A sound alignment between the immediate and broader global environment is required for efficiency and effectiveness. As observed by Mulder (2005: 3), although the implementation of IWRM policies seems successful in most developed countries, developing countries face numerous obstacles including lack of financial resources, the absence of scientific and technical knowledge, inadequate data and a general lack of capacity. Mulder (2005: 4) claims that the prevailing cultural norms, values political structures and the level of economic development also contribute to the challenges facing developing countries that have adopted the IWRM paradigm.

Van Koppen, *et al* (2007: ix) argue:

Ignoring community-based water laws and failing to build on their strengths, while overcoming their weaknesses, greatly reduce the chance of new water management regimes to meet their intended goals. In contrast, when the strengths of community-based water laws are combined with the strengths of public sector contributions to water development and management, the new

regimes can more effectively lead to sustainable poverty alleviation, gender equity and overall economic growth. Indeed, the challenge for policy makers is to develop a new vision in which the indispensable role of the public sector takes existing community-based water laws into full account.

They further argue that although the emphasis on users' participation suggests otherwise, water resources management reform has paid little attention to community-based water laws in rural areas in developing countries. They define community-based water law as the set of mostly informal institutional, socio-economic and cultural arrangements that shape communities' development, use, management, allocation, quality control and productivity of water resources. 'These arrangements, anchored in the wisdom of time, are embedded in local governance structures and normative frameworks of kinship groups, smaller hamlets, communities and larger clans and groupings with common ancestry. In developing countries, they often exist only in oral form' (Van Koppen, *et al*, 2007: 2).

As seen in the case of the Ovambo and the tale of the old man in Ivory Coast (chapter 3), reformers have sometimes tended to ignore, frown upon or even erode community-based water law as they push for adopting the IWRM principles. For Van Koppen, *et al*, (2007: 2), this 'is startling, because these arrangements govern the use of water by large proportions, if not the majority, of the world's citizens: the rural women and men, often poor, who, in self-help mode, use small amounts of water as vital inputs to their multifaceted, agriculture- based livelihoods'.

While the typical ingredients of IWRM may work in the formalized water economies of industrialized countries, they are inappropriate in the informal water economies of the developing world (Mulder, 2005: 4). As a result, there is a renewed and growing call for a new vision on a more refined role of the state and other public and civil sector entities in water resources management in the informal sectors in developing countries (Van Koppen, *et al*, 2007: 2).

4.8 SUMMARY

Water rights can be broadly classified as public, common or private property. Public water rights are rights held by the state where the government allocates rights to users. Common water rights refer to communal water rights where water can be used by people in ways that are specified by some community. In most African customary water laws, water from natural resources is considered community property and private ownership of such water is not recognized. Private water rights are rights held by an individual or a private company. The 1970s saw the first UN conference dedicated to water. This conference defined water as a common good and declared the right of access to basic drinking water for all people. In 1992 the Dublin Conference placed water on the global development agenda and dealt with a number of issues including the economic value of water, the problem of poverty, women's right to participate in decision making on water affairs, conflict resolution and natural disaster awareness. The conference came up with the paradigm of integrated water resources management (IWRM) which promoted the integration of society and natural resources.

All countries in the SADC region are in the process of reforming their water legislation and/or their policies in line with the demands of IWRM. While the framework for a perfect water management system exists in Zimbabwe and South Africa, the situation on the ground does not reflect this ideal situation. The reform process has not taken off as expected owing to a combination of factors ranging from conflicting policies and weak institutional linkages, to insufficient funding. Thus the effectiveness of the new system has been found wanting in as far as implementation is concerned.

The next chapter discusses the way the empirical study was conducted and how data was gathered for the purpose of analysis and interpretation.