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**INSTITUTIONAL CHALLENGES IN INTEGRATED
WATER/RESOURCES MANAGEMENT IN ZIMBABWE:
A CASE STUDY OF THE PUNGWE SUB-CATCHMENT
AREA**

BARBARA NOMPUMELELO TAPELA



A thesis submitted in partial fulfilment of the requirements for the degree of Magister
Philosophiae in the Centre for Southern African Studies, School of Government,
University of the Western Cape.

Supervisor: Dr Mafa Hara

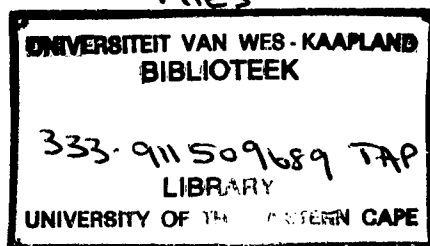
Co-Supervisor: Dr Larry Swatuk

August 2002



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INSTITUTIONAL CHALLENGES IN INTEGRATED WATER RESOURCES MANAGEMENT IN ZIMBABWE: A CASE STUDY OF THE PUNGWE SUB-CATCHMENT AREA

Barbara Nompumelelo Tapela

KEY WORDS

Integrated Water Resources Management

Security

Zimbabwe

Catchment management institutions

Equity

Efficiency

Sustainability

Coordination

Legitimacy

Stakeholder and gender participation

Stakeholder and gender power relations



ABSTRACT

INSTITUTIONAL CHALLENGES IN INTEGRATED WATER RESOURCES MANAGEMENT IN ZIMBABWE: A CASE STUDY OF THE PUNGWE SUB-CATCHMENT AREA

Barbara Nompumelelo Tapela

M Phil Thesis, Centre for Southern African Studies, School of Government, University of the Western Cape.

Integrated Water Resources Management (IWRM) is viewed by policy makers and practitioners as facilitating the achievement of a balance between water resources use and protection, and the resolution of water-related conflicts. The IWRM approach has found particular use in the new water policies of Southern African countries such as Zimbabwe, where water scarcity, after the land question, is perceived to be a major threat to political, economic, social, military and environmental security. Ultimately, IWRM is seen as providing a framework towards ensuring broader security at the local, national, regional and global levels. However, the pilot phase implementation of the new water policy in the various regional countries has revealed that although the legal and institutional frameworks have been put in place, the implementation of the IWRM approach has tended to be problematic (Latham, 2001; GTZ, 2000; Leestemaker, 2000; Savenige & van der Zaag, 2000; Sithole, 2000).

This study adopts a case study approach and empirically examines the institutional challenges of implementing the IWRM approach in the post-pilot phase of Zimbabwe's new water policy. The focus is mainly on the institutional arrangements surrounding the Pungwe-Mutare Water Supply Project located within the Save Catchment Area in Eastern Zimbabwe. The major finding of the study is that, while

there are some problems associated with the traditional management approach, there have also emerged new challenges to IWRM. These mainly relate to the transaction costs of the water sector reforms, institutional resilience, stakeholder participation, and the achievement of the desired outcomes. There have also been problems emanating from unexpected political developments at the local and national levels, particularly with regard to the government's "fast track" land resettlement programme. The study also raises some questions concerning the ideological bases of IWRM and the conceptualization of the institutional problem.

February 2002



DECLARATION

I declare that INSTITUTIONAL CHALLENGES IN INTEGRATED WATER RESOURCES MANAGEMENT IN ZIMBABWE: A CASE STUDY OF THE PUNGWE SUB-CATCHMENT AREA is my own work, that it has not been submitted before for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged by complete references.

BARBARA NOMPUMELELO TAPELA

FEBRUARY 2002

SIGNED:.....*B. Tapela*.....



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ACKNOWLEDGEMENTS

I express my gratitude to all the people and institutions who assisted me during the preparation of this thesis. I am particularly grateful to the members of the Save Catchment Council and the Pungwe Sub-Catchment Council, the Save Catchment Manager and the Save Catchment Council Training Officer. These spared their time to give clarity on the issues arising from their implementation of Zimbabwe's new water policy.

I also thank Engineer Zeb Murungweni of GTZ, Mr Jim Latham of the Manyame Catchment Council, the Water and Sanitation Engineer of the Mutare Municipality, the Provincial Administrator and the Provincial Natural Resources Officer. My thanks also go to various officers in institutions involved in the Integrated Rural Water Supply and Sanitation Programme (IRWSSP) namely, the National Action Committee, the Ministry of Youth, Gender and Employment Creation, and the Ministry of Local Government.

I am particularly indebted to the Centre for Southern African Studies (CSAS) for providing the required funding and indeed facilitating the whole study. I greatly appreciate the guidance given to me by my supervisor, Dr Mafa Hara, and co-supervisor, Dr Larry Swatuk. I also thank Dr Pieter van der Zaag, Prof Lisa Thompson and my fellow students for their generous assistance.

Last but not least, I express my thanks to my husband, Tjeni, my son, Mbongeni, and my parents for giving me the support that I needed in my studies.

Any shortcomings herein are my own responsibility.

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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND: SHIFTING PERSPECTIVES ON WATER AND SECURITY IN SOUTHERN AFRICA

From the 1980s, and particularly since the 1992 Rio Conference on Environment and Development, Integrated Water Resources Management (IWRM) has become a key concept guiding the use, development and management of water resources. IWRM is defined as “a process which promotes the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems” (Global Water Partnership, n. d. cited in van der Zaag, 2001: 10). IWRM is viewed by policy makers as facilitating the achievement of a balance between water resource use and protection, the resolution of water-related conflicts, as well as the promotion of regional peace, security and hence, ‘sustainable development’.

Water resources are indeed closely tied to security and development ideologies, policies and practices. The prevailing interest in IWRM seems to derive from the realization that traditional approaches to water resources use, development and management have failed to provide adequate frameworks for the resolution of water-related conflicts and the promotion of cooperation among various ‘stakeholders’. The conventional approach has tended to view water resources both as a base for industrial development (Golubev & Biswas, 1985) and a strategic component of state-centrist military security (Swatuk & Omari, 1997; Swatuk & Vale, 2000). This approach has been linked to the Cold War politics that have historically viewed threats to security as emanating from outside state political boundaries (Swatuk & Omari, 1997). The conventional view has therefore emphasized externally orientated retaliatory force and the need to build up self-sufficiency in industrial production, technological innovation and food production.

Control over water resources has traditionally therefore been vested upon the nation state entity and the private sector, and water-related decision-making has tended to be top-down and centre-driven.

With the end of the Cold War era and the ascendance of sustainable development as the new high ground, there have emerged new approaches to security (Shaw, 1997a; Soderbaum, 1998; Marchand *et al*, 1999). The concept of security has been expanded, both horizontally and vertically, beyond considerations of state power. The horizontal broadening of the concept has involved the creation of a wider security agenda that embraces the political, social, economic, military and environmental sectors (Buzan, 1991 cited in Booth, 1994; Marchand *et al*, 1999). The vertical expansion of the concept of security has involved conceiving threats to security at various levels of analysis, ranging from the local to the global levels (Buzan, 1991 cited in Booth, 1994). Threats to security are perceived as emanating also from within state boundaries (Shaw, 1997b; Swatuk & Vale, 2000).

Despite the shift in perspectives on security and development, however, the traditional view of security has persisted among some state and policy makers in Southern Africa. Consequently, there is a co-existence of the narrower state-centrist militaristic view with the broader security perspective within the region. The discourse on water and security is imbued therefore with two broad strands of thinking.

The first focuses on the issues of interstate conflict, and considers that unless conflict-resolution mechanisms are incorporated into the use, development and management of shared water resources, water scarcity will potentially be the greatest future cause of interstate conflict within the region (Ashton, 2000; Swain, 2000; Elhance, 1999; Pallett, 1997; Swatuk & Omari, 1997; Ohlsson, 1995). One view is that, as the Southern African countries strive to attain their development goals amid relatively high population and low economic growth rates, conflict might ensue as the various watercourse states compete in staking their claims for a measure of control over the scarce freshwater resources in order to secure their water supply (Swatuk & Omari,

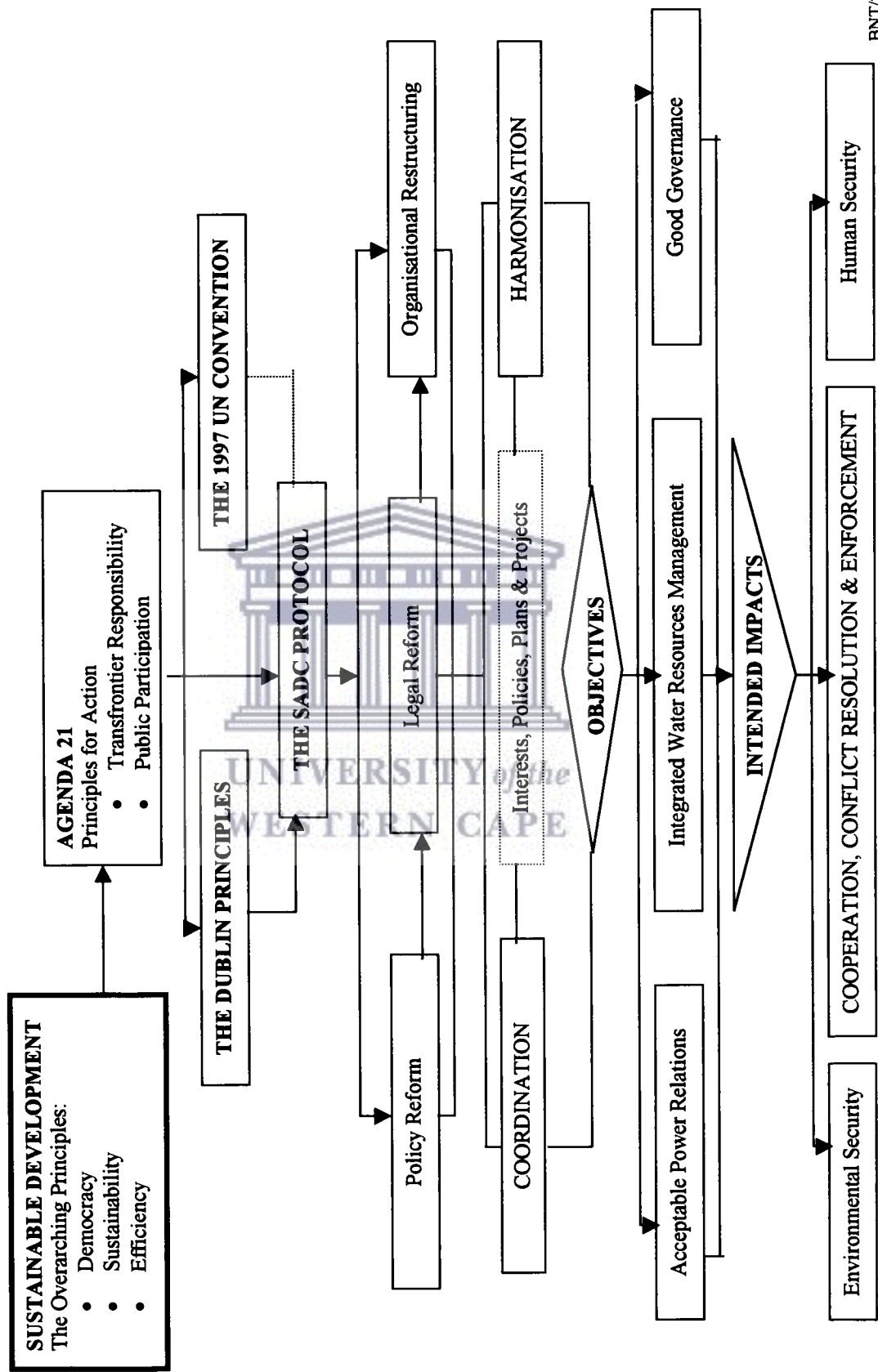
1997). Conflict is also linked to the inequitable allocation of costs and benefits of watercourse management, inefficiencies in the use of water and the negative consequences of human intervention (Savenige & van der Zaag, 2000).

The converse argument views the problems of sharing water as providing opportunities for cooperation within the region (Elhance, 1999; Rudengren et al, 1997). Within this viewpoint, there has been a growing awareness that comprehensive and coordinated water resource management is requisite, given that the major watercourse systems in the region transcend national boundaries, (van der Zaag, 2001a) and that water scarcity is a major problem. Some of the objectives of such cooperation include “good governance” and “acceptable power relations” (Figure 1.1). These attributes, together with IWRM, are considered essential to achieving sustainable regional peace and security. Although the second argument is premised on the broader notion of security, its focus also remains largely on the agency of the state.

While both strands of argument have tended to focus on the inter-state problems of sharing water, such problems also occur at the sub-national level (Swain, 2000; Gleick, 1993). At this level, the observed conflicts among primary water users has tended to revolve around issues of upstream effects on downstream users and allocations of water that are perceived as unfair (Chenje & Johnson, 1996). This study departs from the tendency by many studies to focus on the state level problems of sharing water in Southern Africa in that it is mainly concerned with the local catchment dynamics, and the linkage between these and the national and global level processes.

The shifting perspectives on water and security have resulted in the questioning of the legitimacy of the nation state as the principal referent in water resources management, especially in cases where water resources transcend national boundaries (Savenige & van der Zaag, 2000; Swatuk & Omari, 1997). In such cases, attempts by the traditional approach to fit water into political and administrative boundaries, rather than to design institutions that fit the resource, have created institutional voids when dealing with the management of shared watercourses at the transnational level (Savenige & van der

FIGURE 1.1 INTERNATIONAL IMPACTS ON SOUTHERN AFRICAN REGIONAL WATER POLITICS



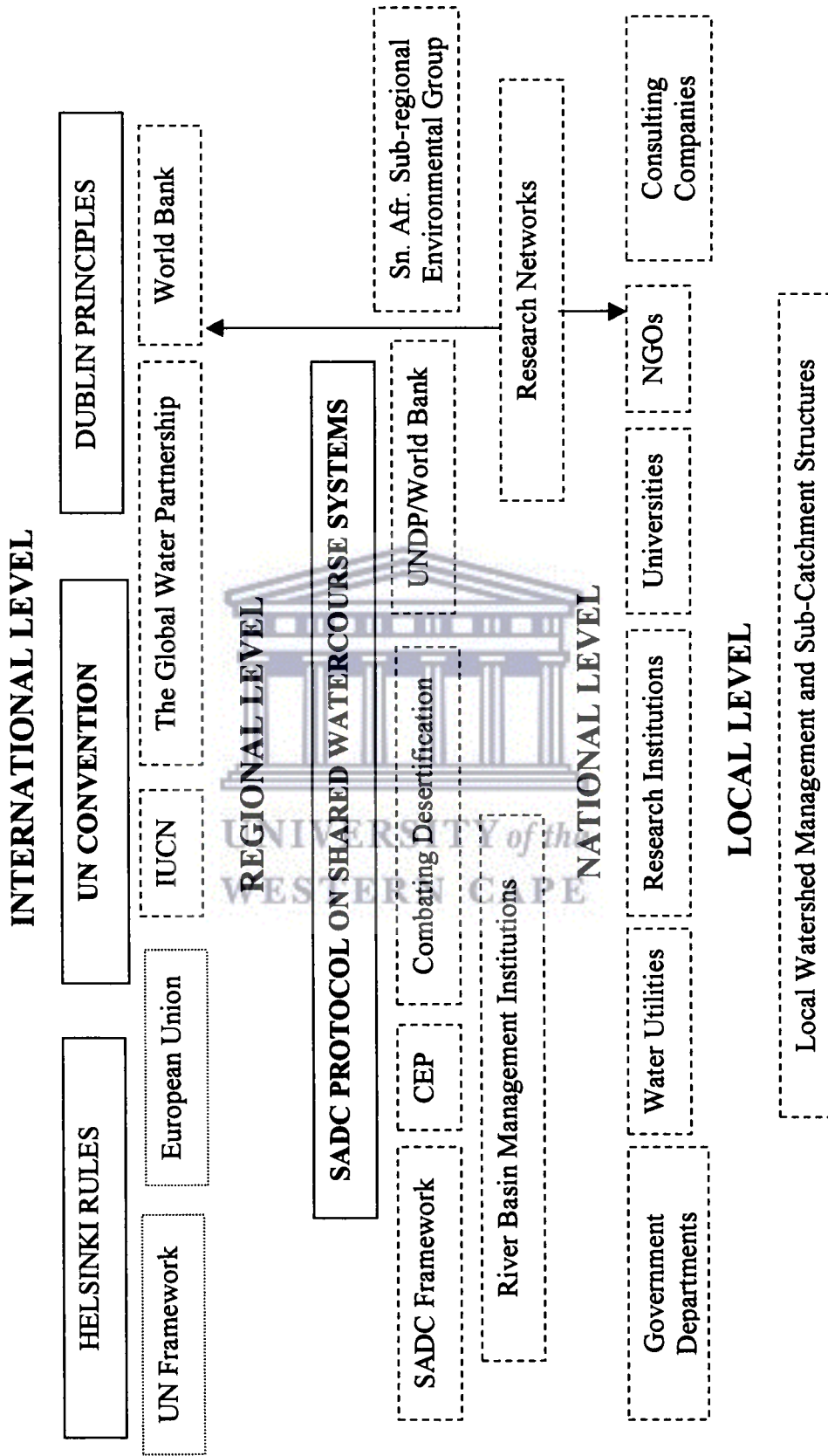
Zaag, 2000). These gaps have often predisposed relations between riparian states toward conflict. The questioning of nation state legitimacy has resulted in the formal acknowledgement that the various competing inter-state and sub-national interests within river basins require new strategies and appropriate ‘institutions’ to govern the sharing of water (Swain & Stalgren, 2000; Falkenmark & Lundqvist, 1995).

The ‘institution’ concept is therefore central to this study. According to Scott (1995: 33), institutions “consist of cognitive, normative, and regulative structures that provide stability and meaning to social behaviour [They] are transported by various carriers – cultures, structures and routines – and they operate at multiple levels of jurisdictions”. This definition is found particularly useful in discussing the water governance framework that has since emerged in Southern Africa.

Southern Africa since the 1980s has increasingly been characterized by the involvement of a multiplicity of institutional structures and donor consortia in the governance of water resources. These are nested in a political ecology hierarchy that ranges from the local to the global level, and they interact and overlap both horizontally and vertically (Figure 1.2). The rallying point for the various interests seems to be the search for new strategies that will promote cooperation in water management within the region, thereby ensuring security, in the broader sense of the term (Figure 1.1). It is from the search for institutional arrangements that are capable of resolving water-related conflicts and fostering cooperation that IWRM has become the key concept guiding the use, development and management of shared watercourse systems in Southern Africa.

Many regional governments have demonstrated their commitment to IWRM by ratifying the 1995 SADC Protocol on Shared Watercourses (Pallett, 1997) and instituting water policy, statutory and institutional reforms (Leestermaker, 2000). The reform processes have largely been in line with the broader international frameworks such as the 1992 Dublin Principles (Ohlsson, 1995) and the 1997 UN Convention on the Law of the Non-navigational Uses of International Watercourses (UN, 1997; Savenige & van der Zaag, 2000).

FIGURE 1.2 SOUTHERN AFRICAN WATER RESOURCES GOVERNANCE: NESTING OF INSTITUTIONAL STRUCTURES



(N.B.: The structures and initiatives interact vertically and horizontally, and their roles, resources and relationships overlap in time and space. Figure 1 shows only some, not all of the multiple structures and initiatives).

At the inter-state level, the UN Convention has provided the appropriate legislative support that the 1966 Helsinki Rules on the Uses of the Waters of International Rivers failed to give (Savenige & van der Zaag, 2000). The UN Convention establishes watercourse states as Responsible and Accountable Legal Entities (RALEs) in the governance of shared water resources, and confers both the legal rights and responsibilities to watercourse states. The Convention also gives formal legal recognition that access to clean water is a basic human right that governments are required to safeguard (Gleick, 1999). The UN Convention is premised on two key principles governing the sharing of international watercourses namely, the right to 'reasonable' and 'equitable' use and the obligation not to cause significant harm (Savenige & van der Zaag, 2000: 15).

The Dublin Principles have formally recognized that women play a central part in the provision, management and safeguarding of water, and that this pivotal role has seldom been reflected in institutional arrangements for the development and management of water resources (UNESCO, 2000). The Dublin Principles urge that the acceptance and implementation of IWRM requires positive policies that address women's specific needs and equip and empower women to participate at all levels in water resources programmes, including decision-making and implementation, in ways defined by them. This study examines the extent to which the local catchment level institutions in Zimbabwe have been gender responsive.

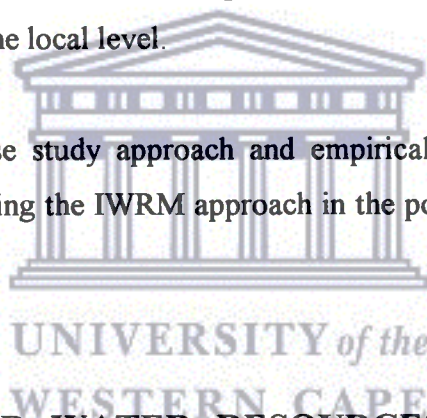
According to Postel (1992 cited in van der Zaag, 2001a: 10), the regional water policy reforms have been premised on the principles of "efficiency", "ecological integrity" and "equity". This study examines the local level institutional capacities and mechanisms towards achieving the envisaged outcomes of IWRM.

The principles of equity, efficiency and sustainability indeed form part of the language of donor agencies such as the World Bank and the International Monetary Fund (IMF), international civic organizations such as the Global Water Partnership (GWP) and

various international development agencies. As such, the adoption of IWRM by the regional countries has had support from the international development community. The implications of such support are that IWRM within Southern Africa is subject to multiple jurisdictions and stakeholders.

The power relations among the multi-level stakeholders seem to have plausible effects on the ways in which the local level institutional actors articulate IWRM. Conversely, the local power politics might have some effects on the actions by the international organizations. The study gives some attention to the influences by international organizations on the institutional capacities and political dynamics of water resources governance at local level, and vice versa, the local influences on the actions of international organizations. Attention is given also to the power politics among the various stakeholders at the local level.

This study adopts a case study approach and empirically examines the institutional challenges of implementing the IWRM approach in the post-pilot phase of Zimbabwe's new water policy.



1.2 INTEGRATED WATER RESOURCES MANAGEMENT IN THE CONTEXT OF ZIMBABWE

1.2.1 IMPLICATIONS OF THE NEW SECURITY PERSPECTIVES ON ZIMBABWE'S WATER POLICY

Since 1995, Zimbabwe has embarked on a water sector reform process that has culminated in a policy framework that embodies the main tenets of IWRM. Central to Zimbabwe's adoption of the IWRM approach are the objectives of redressing past injustices in access to water, resolving conflicts emanating from sharing water, improving efficiency in water use and management, and strengthening environmental protection (Murungweni, 2001).

In essence, there has been a shift away from the past water laws' distinction between ground water, surface water and private water towards recognition that groundwater and surface water are part of the same watercourse system. The water sector reforms have included the recognition that the environment, as the primary resource base, requires some water to be reserved for the maintenance of the ecosystem. This study examines how the Save Catchment Council and the Pungwe Sub-Catchment Council have grappled with the challenges of implementing an integrated approach to water resources management and ensuring an adequate environmental reserve of water, as required by Zimbabwe's new water act.

The new water policy considers that water within the watercourse system is a 'public good' and cannot be privately owned. This is intended to pave the way towards achieving equity in access to water resources and safeguarding the basic water rights of all people in Zimbabwe. There seems to be some confusion, however, within Zimbabwe's new water act over the conceptualization of water within a watercourse as a 'public good' rather than as a 'Common Property Resource' (CPR). A number of scholars (Ostrom, 1990; Bromley 1992; Oakerson, 1992) distinguish between the two concepts on the basis that, although both types of resources are shared and pose difficulties of exclusion from use, the institutional problem regarding CPRs is that the use of these resource units by one user subtracts the benefits of use by other users within the resource system. By contrast, the use of public goods is non-subtractable. This study considers that the observed confusion is a probably problem of semantics, rather than a fundamental flaw of perception about water resources. As such, no effort is devoted to a rigorous analysis of this problem. The study adopts the view that water is a CPR rather than a public good, since its use by some detracts from the benefits to other competing users.

The new water policy of Zimbabwe also recognizes that water has an economic value in all its competing uses. However, in pursuing enhanced efficiency in water use and management, the new water policy makes provision that the principle of water as 'an

economic good' should not compromise the basic water rights of people. This study examines how the power distributing cleavages, particularly gender, have impacted on the achievement of equity in access to water, water-related decision-making and capacity building among stakeholders at the catchment level. Stakeholder and gender power politics seem to have a plausible bearing on the balance between the pursuit of the efficiency and the equity ideals by the IWRM institutions.

The focus on gender by this study derives from the observation that despite that women play a pivotal and multi-faceted role in the provision, use and safeguarding of water in Zimbabwe, water policies have generally not adequately reflected the importance of the women's role in the water sector (UNESCO, 2000). While Zimbabwe's IWRM Strategy (Zimbabwe, 1995) acknowledges, in principle, the need to actively involve women in particular in all levels of water resources management, the new water law (The Water Act of 1998) has not explicitly addressed the issue of gender.

The design phase of Zimbabwe's new water policy has been followed by legal and institutional reforms, and the adoption of the Integrated Catchment Management (ICM) approach as the operational framework towards achieving IWRM. The next section gives an outline of the unfolding IWRM framework and the ICM approach in Zimbabwe.

1.2.2 INSTITUTIONAL ARRANGEMENTS FOR INTEGRATED WATER RESOURCES MANAGEMENT IN ZIMBABWE

In order to facilitate ICM, the country has been partitioned into seven Catchment Areas (Figure 1.3). The Catchment Area boundary is defined by the whole extent of the river system or group of river systems (Zimbabwe, 2000a). Each Catchment Area falls under the jurisdiction of a Catchment Council (CC). The Catchment Areas are sub-divided into Sub-Catchments whose boundaries are delineated according to "sub-hydrological zones". The Sub-Catchments are administered by Sub-Catchment Councils (SCCs). In

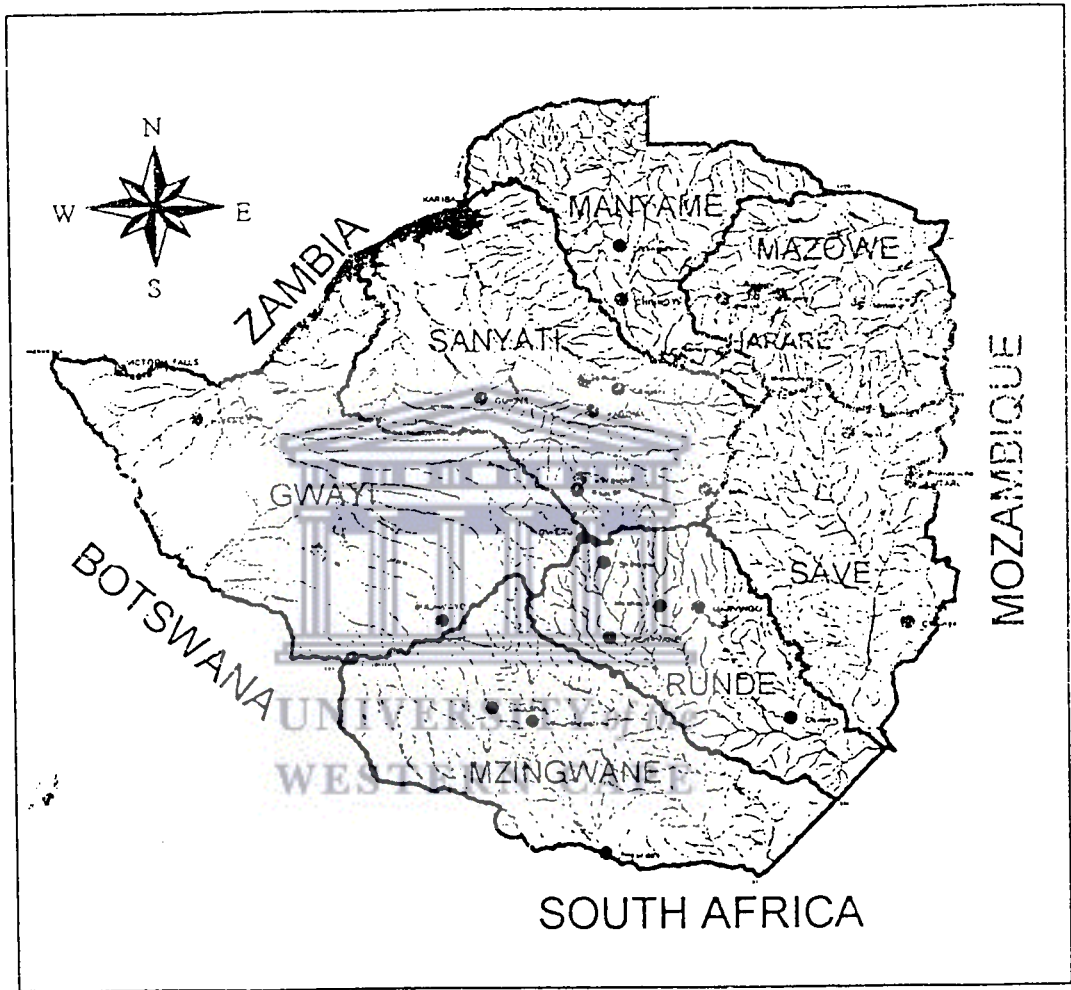


FIGURE 1.3 ZIMBABWE: CATCHMENT AREA BOUNDARIES

some parts of the country, the Sub-Catchments have been further sub-divided into Water User Boards or Associations that are composed of elected members from defined “micro-catchments”.

Zimbabwe’s water sector reforms have resulted in the dispersal of authority to sub-national and supra-national levels; the separation of regulatory and operational functions, and the delegation of operational functions to the lower levels. The decentralization of water resources management has involved the emergence of a hierarchical organizational structure for the governance of water resources within the country (Figure 1.4). This study focuses on the local catchment level institutions for IWRM.

At the local catchment level, the devolution of authority to river basin institutions has been based on the principles of stakeholder participation, equity in access to water resources, efficiency in resource use and management, and sustainability of the ecosystem, livelihoods and administrative structures. It would seem that the organizational structure for catchment management is intended to enhance *efficiency* in water use, development, management, appropriation and provision; *equity* through representative stakeholder participation, involving various interests from the lowest possible level; and the *sustainability* of the ecosystem, livelihoods, economies, and water resources management institutions. ‘Stakeholder’ participation in water-related decision-making and the devolution of water resources management authority to the local level are seen as ways of reducing the ‘transaction costs’ of resources management.

The legally recognized stakeholders that constitute the CCs and SCCs include local authorities (Municipalities, Town Councils, Rural District Councils and traditional leadership), Mines, Large and Small Scale Commercial Farmers, Communal Farmers and Resettlement Area Farmers (Zimbabwe, 1998). Two councillors represent stakeholders at the SCC level in the CC. In turn, each CC in Zimbabwe is represented by three councillors in the Zimbabwe National Water Authority (ZINWA) Board of

Governors. In effect therefore, the emerging framework of local stakeholder participation in water governance is through representation.

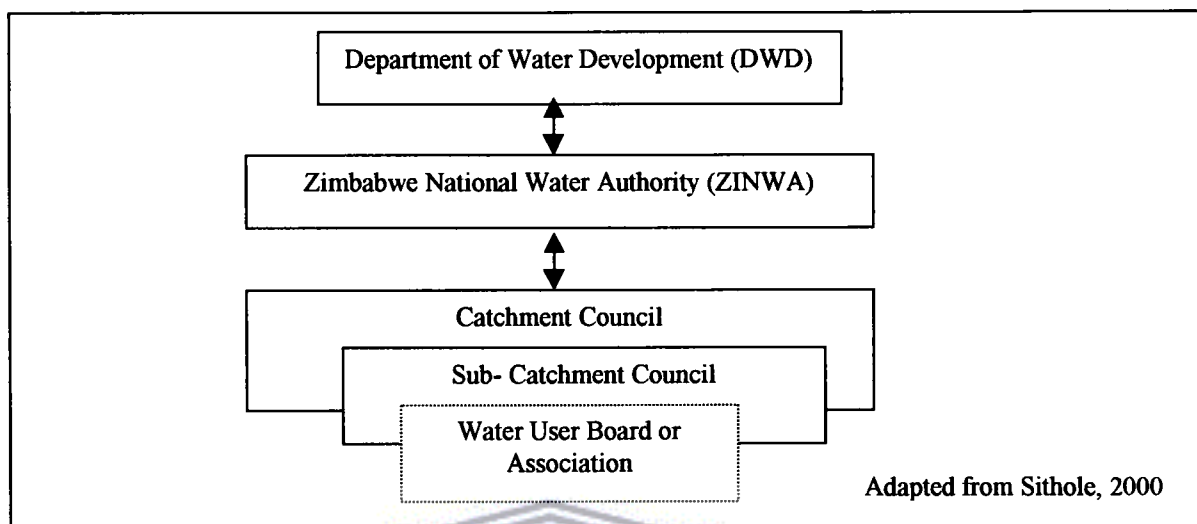


FIGURE 1.4 ZIMBABWE: ORGANIZATIONAL HIERARCHY FOR WATER GOVERNANCE INSTITUTIONS

The responsibilities of the CC include collaborating with the water parastatal, ZINWA, in preparing and updating Catchment Outline Plans; deciding on and enforcing all water allocations and reallocations; developing and supervising programs for catchment protection; issuing and overseeing permits for water use; establishing and maintaining, with ZINWA, a data base and information system; and overseeing operations and functions of SCCs (Zimbabwe, 1998). Due to constraints of institutional capacity, the Catchment Manager, an employee of ZINWA, gives technical advice to the CC. The Catchment Manager is also empowered by the law to make water allocation decisions if the CC is in recess, provided there is no specific opposition to the water permit applications.

The responsibilities of SCCs are to monitor the exercise of permits, water flows and use; to assist in pollution control, catchment protection and data gathering; and to collect from permit holders the levies to be used in the performance of the councils' functions (Zimbabwe, 1998).

In the case of the Pungwe River Basin, a number of institutional arrangements have been put in place to perform the operational functions of IWRM. At the local level, in the portion of the watercourse within Zimbabwe, the Pungwe Sub-Catchment Council was established in 1999 as a constituent of the neighbouring Save Catchment Council. A Catchment Manager, who is employed by ZINWA, assists these councils with the issuing of water permits and with other technical aspects of water management. At the bi-lateral level, ZINWA has been involved in the Joint Water Commission Concerning Water Resources of Common Interest between Mozambique and Zimbabwe. The Pungwe Sub-Catchment Council, however, has expressed an intention to be more directly involved in the governance of the Pungwe watercourse at the inter-state level. The Pungwe Sub-Catchment Council is potentially therefore a key player in the higher level discourses over the sharing of Pungwe water.

In general, Zimbabwe's water sector reforms would seem to have provided the policy environment required for resolving water-related conflicts and ensuring broader security. The Catchment Councils and Sub-Catchment Councils seem to have effectively become centrally placed to deal with the unfolding challenges of implementing IWRM policy and achieving the envisaged outcomes at the local catchment level. However, various studies of the pilot phase of policy design and implementation (Nhidza, 2001; Derman & Ferguson, 2000; Latham, 2000; Ndamba, 2000; Sithole, 2000) have noted some of the difficulties faced by the catchment level institutions in translating political will into effective and coordinated practice.

This study examines the unfolding post-pilot phase implementation of IWRM policy by two of the institutions surrounding Zimbabwe's Pungwe-Mutare Water Supply Project. Focus is on the Pungwe Sub-Catchment Council, at the lower level, and the Save Catchment Council, at the higher level of the hierarchy for the management of the Pungwe watercourse.

1.3 RESEARCH PROBLEM

Definitions of the IWRM concept, such as that given by the Global Water Partnership (GWP), are perhaps not too difficult to comprehend, at least at face value. However, the articulation of IWRM seems to present a much greater challenge, owing to the complexity of what the concept involves. Mostert (1999) considers that the four main aspects of IWRM are the 'substance', the 'institutional context', 'process management' and the 'embedded context'. To these, this study adds a fifth aspect, that is, the 'outcomes'. The challenge of IWRM is in the operationalization of these aspects.

For example, the substance of IWRM, according to Mostert (1999), implies the following aspects:

- The systematic considerations of various interrelated aspects of water systems: including surface and groundwater, quantity and quality, bed, banks, morphology, aquatic ecosystems, and technical infrastructure (including the infrastructure for drinking water supply, sewage collection and sewage treatment);
- The management of water systems in conjunction with other parts of the environment, including land resources and the atmosphere;
- The adoption of an approach that relates water and land resources management to socio-economic development.

Mostert asserts that IWRM is essentially about treating these interrelated aspects as such, in order to prevent ineffective or sub-optimal sectoral solutions. To achieve this, the catchment level institutions should have the necessary capacity to adopt a complex integrated approach towards planning and implementation. Coordination, information gathering and dissemination, and monitoring and enforcement are some of the capabilities required. Others include the resources to carry out operations, such as finance, knowledge and technology.

Evaluations of the pilot phase of policy implementation show that, at that point in time, these institutions had still to grapple with the problems associated with devolution of authority, particularly the transaction costs of the reforms, legitimacy and stakeholder participation. Beyond this, the Catchment Councils and Sub-Catchment Councils had to develop the capacity to strike the difficult balance between ensuring the broader security of their local constituencies and dealing with the positive and negative impacts of national and global processes.

With regard to the ongoing post-pilot phase, the first problem for this study's investigation is captured in the following question:

- Do the Pungwe Sub-Catchment Council and the Save Catchment Council have the necessary capacities to successfully fulfill the various functions vested upon them under Zimbabwe's new water policy?

The second problem relates specifically to the capacity by the Catchment and Sub-Catchment Councils to resolve stakeholder conflicts. The term 'stakeholder' here is limited to the various interests within the particular Catchment and Sub-Catchment Areas, whether or not the new water law has formally identified them. The study addresses this question:

- What has been the impact of the power relations among stakeholders on the effectiveness of the IWRM institutions?

The third problem for the study concerns the specific capacity of the institutions to effectively address women's specific needs and to equip and empower women to participate at all levels of water resources management within the Save Catchment and the Pungwe Sub-Catchment Areas. The adoption of effective gender approaches addresses the main tenets of frameworks such as Principle 3 of the 1997 Dublin Statement on Water and the Environment (UNESCO, 2000) and Zimbabwe's Water Resources Management Strategy (Zimbabwe, 1995). The third problem for the study can be summed up as follows:

- Is the unfolding IWRM framework basically reinforcing the existing power relations between gender groups, or are there attempts to bring about real

empowerment of both the female and male stakeholders within the Pungwe Sub-Catchment Area.

1.4 RESEARCH AIM AND OBJECTIVES

The aim of the study is to assess the actual and potential capacity of the Save Catchment Council and the Pungwe Sub-Catchment Council to perform the operational IWRM functions vested upon them in the post-pilot phase of Zimbabwe water sector reforms in an effective and sustained manner.

The study specifically addresses three objectives namely: institutional capacities, the issue of stakeholder power relations and gender issues in IWRM.

1.4.1 INSTITUTIONAL CAPACITIES

The first objective is:

- To examine how and to what extent the institutional arrangements have addressed the issues of *equity* in stakeholder participation in decision-making, capacity building and in access to the benefits stream emanating from IWRM; *efficiency* in the appropriation and provision of water, coordination within the water governance hierarchy and between related sectors, collection and dissemination of information, and monitoring and enforcement of water laws and other requirements; and *sustainability* of the water governance institutions, the livelihood and food security of the people affected by interventions such as the Pungwe-Mutare Water Supply Project, and the ecosystem of the Pungwe Watercourse.

1.4.2 STAKEHOLDER POWER RELATIONS

The second objective is:

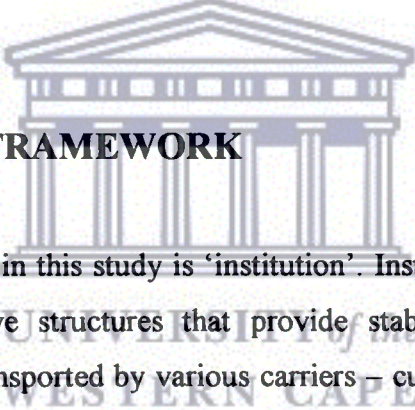
- To determine how the politics of stakeholder power relations have affected the effectiveness of the water governance institutions.

1.4.3 GENDER ISSUES

The third objective of the study is:

- To determine the extent to which the catchment and sub-catchment councils have been gender-responsive.

1.5 RESEARCH FRAMEWORK



The central concept used in this study is 'institution'. Institutions "consist of cognitive, normative, and regulative structures that provide stability and meaning to social behaviour..[They] are transported by various carriers – cultures, structures and routines – and they operate at multiple levels of jurisdictions" (Scott, 1995: 33). Focus is on the local catchment level institutions. With regard to these, the research is centred on three axes of enquiry namely, institutional capacities towards addressing the goals and objectives of IWRM, the issue of stakeholder power relations, and the issue of gender in IWRM. The study links the issue of gender to the issue of stakeholder power relations through analyses of the politics of access by women and men to bases of social power and productive wealth.

In addressing the institutional problem, the starting point for the research is 'governance'. The concept of governance refers to the procedures and practices that exist for the management of social, economic, political and environmental resources (McCarney; Cox, 1997). Governance is viewed terms of the praxis between 'global

governance' and 'local governance', and the role of the 'nation' state within the linkage of the two.

The study considers that the governance of water resources encompasses two dimensions: the hierarchical and the multi-lateral forms of coordination of institutions ranging from the global to the local level. The hypothesis here is that the power relations among the various stakeholder institutions are a key factor determining the performance of IWRM institutions at the local catchment level. Hence, the issue of politics frames much of the research. 'Politics' here is used in the broader sense to include any contest of power.

Given that the political power relations among the nested stakeholder institutions have a plausible influence on the performance of local catchment management institutions, this study adopts an overarching research framework that combines aspects of 'global political economy' and 'global political ecology'. Global political economy essentially looks at the mutual influences of the market and sources of authority, including the state (Leysens & Thompson, 1999). Global political ecology refers to the way in which the various interests arrange themselves around particular natural resources (Hasler, 1995), in this case, water. Focus, however, is on the local political economy and political ecology, and how these interact with the broader national and global factors. It is considered that the 'political economy-political ecology' framework gives due emphasis to the interaction between market forces, sources of authority and the political power-play that determines the security agenda as it relates to water resources management.

1.6 RESEARCH DESIGN

The research design for this study (Figure 1.5) revolves around five themes. These include: the Substance of IWRM, the Institutional Context, Process Management, the Embedded Cultural, Social, Political and Economic Context', and the Outcome

Variables'. Appendix 1, 2, 3 and 4 show the variables that were used in the investigation, and how these variables were operationalized.

1.7 RESEARCH METHODOLOGY

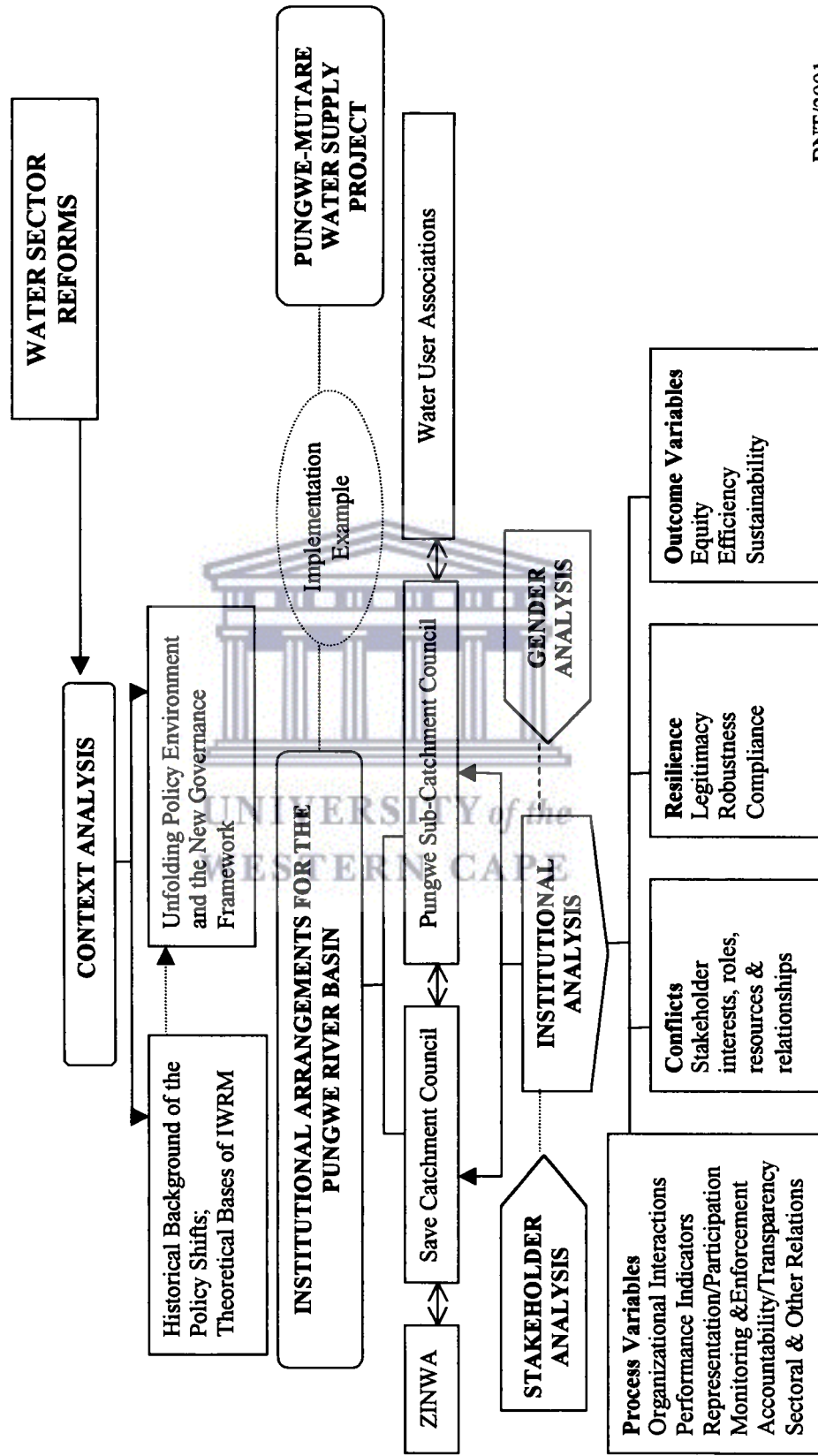
1.7.1 METHODS OF DATA COLLECTION

The study relies on both primary and secondary data. The primary data sources included direct observation during council and other meetings and in-depth qualitative interviews with key resource persons and various stakeholders. Where possible, focus group discussions were used. Secondary data sources such as maps, official records, published literature, statistical survey reports, and other documents compiled by government and non-governmental institutions, academics and other researchers were also used.

1.7.2 DATA ANALYSIS METHODS

The study adopts an overarching analytical framework that combines the political ecology and political economy factors. The rationale is that the complexity of the multi-level stakeholder politics and management problems in water resources governance requires an analytical framework that captures and deals with this complexity, while enhancing clarity on the implementation problems. The study therefore considers that the 'political ecology-political economy' framework of analysis gives due emphasis to the linkage between the environmental, socio-economic and political factors that interact in IWRM. The political ecology-political economy framework also captures the dynamics, interactions and impacts of the multiple local, regional and global ideologies and interests on the institutional arrangements surrounding the Pungwe-Mutare Water Supply Project.

FIGURE 1.5 RESEARCH DESIGN



The methods of analysis used in the study include Context Analysis and Institutional Analysis. Within Institutional Analysis, particular attention is given to Stakeholder Analysis and Gender Analysis (Figure 1.5).

Context Analysis involves examining the theoretical and historical background to the ongoing water sector reforms, and the unfolding policy environment and water governance framework (Figure 1.5). The Pungwe Mutare Water Supply Project is used as an example of settings within which the emerging water sector reforms and governance framework are articulated in Zimbabwe. The project context provides useful insights into the assumptions concerning the need for intervention (water sector reform), and the connection of stakeholder participation to IWRM and water resource governance.

Institutional Analysis involves the analysis of process variables, conflicts, institutional resilience and the outcome variables (Figure 1.5). Process variables include the following: organizational structure interactions, representation, participation, accountability, transparency, enforcement, performance indicators and institutional relations with other relevant sectors and actors. Institutional resilience variables include these: legitimacy, robustness and compliance. Outcome variables include the following: sustainability, equity and efficiency. Stakeholder conflicts are mainly examined within the Stakeholder Analysis framework.

Stakeholder Analysis seeks to draw out the interests, conflicts of interest and power relations among stakeholders. It also gives indication of the relative influence, power and control of the various institutional actors, thus clarifying the political dimensions of IWRM. Stakeholder Analysis ultimately contributes to the assessment of the appropriateness of the participatory mechanisms employed within the Save Catchment and Pungwe Sub-Catchment Councils.

Gender Analysis in this study involves determining the role of gender in access to institutional decision-making and capacity building. Gender Analysis also examines the

extent to which the institutions have incorporated specific measures and targets of gender representation, for example the Gender Empowerment Measure (GEM). The degree of gender-responsiveness by the catchment and sub-catchment councils seems to have a plausible link to the effectiveness and sustainability of these institutions. The study acknowledges, however, that while the quantitative GEMs give some indication of gender inclusion, they often mask the perpetuation of differences in political power and access to resources between women and men within institutions. In addressing this problem, the study goes beyond GEMs and draws out the more reliable indicators of gender mainstreaming and women's empowerment from the responses by female stakeholders in the Pungwe Sub-Catchment and other institutional actors in related sectors within the Save Catchment Area.

A key analytical tool within the study is the testing of the institutional design criteria put forward by scholars like Ostrom (1990) and Dovers & Dore (1999 cited in Dovers, 2001). The study uses these criteria as indicators, rather than blueprints, for institutional effectiveness and sustainability. Beyond that, such testing contributes, at a conceptual level, to the gauging of the usefulness of the sets of institutional design criteria in analyses of the institutional problem.

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1.8 LIMITATIONS OF THE STUDY

Although attempt has been made to towards a rigorous assessment of the institutional problem of implementing IWRM at the local level, certain logistical constraints concerning the scope of data collection have imposed some limitations on the study.

Firstly, the study focuses on catchment institutions that are aligned vertically within the water governance hierarchy. Ideally, the study should have examined also the horizontal alignment of the institutions surrounding the Pungwe-Mutare Water Supply Project. The inclusion of all the three institutions directly involved in the Pungwe-Mutare Water Supply Project, namely: the Save Catchment Council, the Pungwe Sub-Catchment

Council and the Odzi Sub-Catchment Council, would perhaps have given a more appropriate treatment of the problems of water governance associated with the inter-basin water transfer scheme.

Secondly, data collection on stakeholder power relations during the field survey was limited to the examination of various interests within the Save Catchment and Pungwe Sub-Catchment Areas, whether or not the new water law has formally identified them. The interests of stakeholders from outside these areas were given attention only so far as they had had tangible influences on the operations of the two councils. For practical purposes therefore, a whole range of other stakeholders from outside the catchment boundaries were excluded from this research.

Thirdly, the focus on institutional actors in the field survey detracts from the depth of data captured on gender issues in that the relatively few women involved in institutional decision-making and operational functions largely provide views on behalf of the majority of female primary water users. Such representation may not give the required level of nuance on gender issues in IWRM.

Despite these limitations, it is hoped that the findings by the study will contribute to the clarification of the institutional problem and the strengthening of the Save Catchment and the Pungwe Sub-Catchment Council. It is also hoped that the findings will have general applications to similar cases elsewhere.

1.9 SCOPE OF THE STUDY

The following chapter (Chapter 2) presents a review of literature on: the theoretical bases of IWRM; the frameworks of institutional design criteria put forward by scholars like Ostrom (1990) and Dovers & Dore (Dore, 2001); and the institutional challenges observed during the pilot phase of Zimbabwe's new water policy design and implementation. The institutional design criteria not only contribute to the framework

for analyzing the effectiveness and sustainability of the catchment level institutions by this study, but they are in themselves tested for appropriateness as tools for analyzing the institutional problem in IWRM at the local level. Finally, the Conceptual Framework is presented in the last section of Chapter 2. Initially, however, Chapter 2 presents definitions of the key concepts of the study.

Chapter 3 initially gives the background to the Pungwe-Mutare Water Supply Project and the unfolding institutional arrangements for the integrated management of the Pungwe Watercourse. Within this background, the geographical location, spatial delineation, and distribution of land uses and drainage features of the Pungwe River Basin are outlined. The essential features of the Pungwe-Mutare Water Supply Project are described within the context of the water availability problems within and adjacent to the Pungwe basin. Following this, the formation and structure of representation of the Save CC and the Pungwe SCC are outlined.

Chapter 4 presents an analysis of the challenges of post-pilot phase policy implementation, largely pertaining to the devolution process and the attendant issues of institutional capacities, stakeholder power relations and gender.

Chapter 5 begins by putting forward an assessment of the strengths, weaknesses, threats and opportunities of the Save CC and the Pungwe SCC in terms of institutional capacity, stakeholder power relations and gender issues. The assessment is largely based on the institutional design criteria put forward by Ostrom (1990) and Dovers & Dore (1999 cited in Dovers, 2001). Some attention is given to the politics of provision and appropriation in the observed stakeholder relations. Ultimately, the discussion broadens to include an interrogation of selected concepts underpinning IWRM. Focus is on in Zimbabwe in particular and Southern Africa in general.

CHAPTER TWO

LITERATURE REVIEW

IWRM is seen as a means towards addressing the overarching principles of sustainable development namely: democracy, efficiency and sustainability. The prevailing view is that the achievement of the imperatives of sustainable development requires the synergy of a multiplicity of multi-level *institutions* in the management of 'scarce' *water resources* in regions such as Southern Africa. Such synergy is considered to be specifically prerequisite to resolving water-related conflicts and achieving broader *security*.

Consequent to these views, there has been a dispersal of *power* over Southern African water resources from the traditional state centre towards the local and global levels. There have emerged new institutional arrangements for the *governance* of water resources. Within these institutional arrangements, *stakeholder participation* has become a core principle that is seen as an effective means of reducing the transaction costs of water management while enhancing equity and efficiency. Within the participatory approach, there is recognition that embedded socio-political factors often limit the participation by women, and this has resulted in calls for effective *gender approaches* in IWRM.

While Zimbabwe's water sector reforms have echoed the regional trends in embracing the prevailing perspectives on water and security and the participatory approach, a key question relates to the '*capacity*' of the catchment level institutions to handle the challenges of governing the collective use of water. Evaluations of the pilot phase of policy implementation indicate that there might be a need for *capacity building* within these institutions, and within governmental agencies, NGOs and other institutions.

2.1 DEFINITION OF KEY CONCEPTS

2.1.1 INTEGRATED WATER RESOURCES MANAGEMENT

The Global Water Partnership (GWP) (n. d. cited in van der Zaag, 2001: 10) defines IWRM as “a process which promotes the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems”.

The meaning of the concept of IWRM appears to have been subject to debate, however, owing to the multi-dimensional nature of the concept and the differences in perception among scholars and practitioners from various water-related fields. While this study acknowledges the definition put forward by the GWP, the study finds Erik Mostert’s interpretation of the meaning, dimensions and operationalization of IWRM more specific, though not exhaustively so. Mostert (1999) identifies three main dimensions of IWRM namely, the ‘substance’, the ‘institutional context’ and ‘process management’. These are embedded within ethical, cultural and psychological contexts.

According to Mostert (1999), the substance of IWRM involves treating the interrelated components of the water system - including surface water, groundwater, atmospheric water and other storages and flows - in conjunction with other parts of the environment. The substance dimension also involves approaching water systems and land resources in relation to socio-economic development. The institutional context refers to the question of who is responsible for what. It is therefore largely legal in nature, and determines how many parties are involved in the different management processes, what their legal powers are, and whether these powers are overlapping and clearly described or not. Process management, by contrast, tries to make management processes more effective by structuring them, by promoting cooperation between different managers responsible for policy formulation and implementation, and by organizing public involvement.

2.1.2 INSTITUTION

The 'institution' concept is central to this study. Mainstream institutional theory defines institutions as being the rules, regulations and conventions that impose constraints on human behaviour to facilitate collective action (North, 1990). According to North (1990: 6) "the major role of institutions in a society is to reduce uncertainty by establishing a stable (but not necessarily efficient) structure to human interaction". Scott (1995: 33) defines institutions as consisting of cognitive, normative, and regulative structures that provide stability and meaning to social behaviour. He also considers that various carriers (cultures, structures and routines) transport institutions, which operate at multiple levels of jurisdictions.

The term institution in this study largely refers to institutional structures, including formal and non-formal organizations. Other institutional forms are specifically referred to as rules, conventions, policies or laws according to their specific characteristics.



2.1.3 WATER SCARCITY

This study adopts the definition of 'water scarcity' by Elhance (1999: 4) that water scarcity is "a lack of secure, uninterrupted, and long term availability of adequate amounts of fresh water, of required quality, on a regular basis, and for multiple needs".

The definition of water scarcity has been subject to various interpretations. A number of scholars (Turton, 1999; Pallett, 1997; Rudengren *et al*, 1997; Falkenmark & Lundqvist, 1995; Ohlsson, 1995) view water scarcity within Southern Africa as basically a function of three factors namely, resource depletion, population growth and structural factors. Structural factors are those that create unequal access to resources and are induced by environmental factors such as the precipitation-evaporation ratio, and socio-economic factors such as demand and supply. This view has formed the primary basis for the

argument for new strategies and appropriate institutions for water resources management in the water stressed regions of the world. This study has reservations about the popular notion of water scarcity. These reservations largely draw from the views expressed by Rudengren *et al* (1997) and Swain (2000).

Rudengren *et al* (1997: vi) state that while there is a definite recognition in the Southern African region that conflict over water is real, the problems themselves are largely unknown and unexplored. Reasons seem twofold. Firstly, there might be “a gap between actual water scarcity and the conceived water situation”. Secondly, this conceived state “seems to leave the SADC region without sufficiently institutionalized mechanisms for the resolution of arising conflicts”.

Swain (2000) observes that the problem with the prevailing notion of water scarcity for regions such as Southern Africa is that water scarcity is frequently expressed statistically in terms of Malin Falkenmark’s ‘water barrier’ approach. This approach measures the water adequacy of different countries using a simple index of annual per capita freshwater availability for each country. Swain comments that the water barrier approach does not address the water available to a country from trans-boundary sources. In addition to this, the approach emphasizes the role of population, whereas the per capita demand for water depends on economic activities, type of agriculture, livestock practices and lifestyle (Raskin *et al*, 1995 cited in Swain, 2000: 179). Furthermore, the approach hides the seasonal and local nature of water scarcity, and also fails to capture the different forms of water use among the various regions of the world.

2.1.4 GENDER APPROACHES

Theoretically, gender approaches have ranged from the ‘women-in-development’ (WID) approaches, through the ‘women-and-development’ (WAD) approaches, to the gender-and-development’ (GAD) approaches. The shifts in approaches have centred on the issue of political power in the relations between women and men. The 1980s WID

approaches are the 'integrative approaches' that focus on the 'inclusion' of women in activities and processes that have already been decided by others. The 1990s GAD approaches, by contrast, include the 'mainstreaming' and 'empowerment' approaches.

Critiquing feminist theory on the issue of gender and power, Arnfred (2001) states that the term 'gender' was intended to put women into context, by focusing on the socially constructed relation between women and men, and by so doing make visible the aspect of power in gender relations. However, gender had since become de-politicized as its usage had often been reduced to descriptive terms. Thus the shift from 1980s 'integrative approaches' to the 1990s gender approaches had often failed to highlight the issue of power relations between women and men.

This study considers that the GAD approaches are more appropriate to the analysis of gender issues in IWRM institutions. Water governance and water resources management are political and gendered activities. Therefore the analysis of stakeholder power relations by this necessarily interrogates the political aspects of gender participation and stakeholder conflicts. This study also examines the institutional capacity to go beyond gender inclusion and embrace gender empowerment and mainstreaming with genuine commitment.

2.1.5 INSTITUTIONAL CAPACITY

In terms of Zimbabwe's new water policy, Catchment and Sub-Catchment Councils are the local level IWRM institutions vested with the authority to govern the appropriation, provision and protection of water within defined Catchment Areas. The capacity of the local institutions to fulfill these functions is a critical factor in the success and sustainability of the policy goals.

The IUCN (1997) defines local 'capacity' as the ability of local stakeholders to manage and derive benefits from resources in a sustainable manner. Critical variables of local

capacity include the possession or access to knowledge, technology and the means to manage resources (Laban, 1995). The critical variables also include the level of cohesion among resource users, as well as how local governance structures and local organizations are representative of local interests and capable of resolving conflicts (IUCN, 1997; Little, 1994). Given that the catchment level institutions are nested within a global hierarchy of water resources governance, local capacity would also seem to include the ability of these institutions to balance the pursuit of local objectives with the objectives of the broader resource community. The nature of the resource base and the abundance of resources in relation to the human population are also important contributing factors to local capacity (IUCN, 1997).

2.1.6 INSTITUTIONAL CAPACITY BUILDING

The study adopted the views by Abrams (2002) that:

Capacity building is the process whereby a community equips itself to undertake the necessary functions of governance and service provision in a sustainable fashion. The process of capacity building must be aimed at both increasing access to resources and to changing the power relationships between the parties involved. The "community" may be a local government, a village level committee or even a central government department. Capacity building is not only constrained to officials and technicians but must also include the general awareness of the local population regarding their services and development in general.

A common view is that participatory capacity and confidence must be build for all the relevant institutional actors, particularly the poorly represented groups (Warburton, 1998; Dalal-Clayton, 1997; Wright, 1994). The objective of capacity building in IWRM is to institutionalize participatory approaches through transformation of institutions in the various water and related sectors at the different levels of operation. Such capacity building necessarily has to target the poorly represented groups, particularly women. Wright (1994) states that capacity building requires sufficient project time for consensus

to emerge, access to timely information, an appropriate scale of activities, and funding to strengthen local capabilities. Wright further states that confidence comes from success built on existing activities that are “locally tested and culturally calibrated”.

2.2 SUSTAINABLE DEVELOPMENT AND THE EMERGENCE OF INTEGRATED WATER RESOURCES MANAGEMENT

IWRM has emerged largely as a result of the broader social and political shifts that have occurred in world international relations in the aftermath of the Second World War and, more recently, the Cold War. From the post-Second World War preoccupation with ‘economic interdependence’, the premise of world international relations has shifted to ‘ecological interdependence’ and ultimately to an enmeshing of the two (MacNeill *et al*, 1991). With the end of the Cold War, Sustainable Development has emerged as the new ‘high ground’ that informs much of the on-going strategic action in development and security policy and planning.

The overarching principles of Sustainable Development are ‘equity’, ‘efficiency’ and ‘sustainability’. It is within the framework of these principles that the new agenda for water, development and security has been cast. Towards achieving the imperatives of this agenda, Agenda 21 stipulates the following as the guiding principles for action: ‘global environmental stewardship’, ‘trans-frontier responsibility’, ‘public participation’, and ‘gender responsiveness’. With specific regard to IWRM, international frameworks that have been ratified by governments include the 1992 Dublin Principles (Ohlsson, 1995), the 1997 UN Convention on the Law of the Non-Navigational Uses of International Watercourses (UN, 1997), the 1997 Dublin Statement on Water and the Environment (UNESCO, 2000), and at the regional level, the SADC Protocol on Shared Watercourses (Pallett, 1997).

A common view is that Sustainable Development is itself “a critique of both the earlier forms of development and their negative social and economic impacts, and the way in which development has been articulated in the past” (Warburton, 1998). This view is resonant in the analyses of the emergence of Sustainable Development by Hoff (1998), Ghai & Vivian (1995), Chatterjee & Finger (1994) and Eckersley (1992). Such analyses attribute the emergence of Sustainable Development to the convergence and crystallization of the criticisms of Industrial Development by the environmentalist, socialist and poor people’s movements.

These movements might indeed have made significant contribution to the rise of Sustainable Development. In addressing the institutional problem in this study, however, what warrants closer scrutiny perhaps is the convergence of these movements with diverse, contradictory and competing development approaches and actors on the principles for Sustainable Development. Beneath the normative consensus between the Mainstream and Alternative development approaches, and between state actors, the World Bank and IMF, and civil society actors, there probably lurk different theories, paradigms and sets of assumptions regarding the principles for Sustainable Development and the agenda towards attaining such development and security.

The implications of this for the realm of water resources management in Southern Africa in general and Zimbabwe in particular are that the articulation of IWRM is subject diverse, contradictory and competing interests, from both within the Catchment and Sub-Catchment Areas and externally. A key question is therefore: Who sets the agenda for IWRM, and whose security does that agenda address? In addressing this question, the following section reviews literature on the theories, approaches and assumptions inherent in the management to resources such as water.

2.3 THEORETICAL AND CONCEPTUAL BASES OF INTEGRATED WATER RESOURCES MANAGEMENT: COMMON-PROPERTY RESOURCES THEORY

Water resources are closely tied to development and security ideologies, policies and practices. In view of the fact that the water governance framework brings together a diversity of actors whose interests interact and overlap, the conception of IWRM is a product of a variety of theories, approaches and assumptions. The founding theories for IWRM however are the theories pertaining to problems of collective action in the use of 'common-property resources' (CPRs). CPRs are generally defined as a class of natural or man-made resources for which exclusion is difficult and joint use involves subtractability of the resource yield (Hackett, 1992: 325; Feeny et al, 1990 cited in Hara 1999: 3; Ostrom, 1985; 1990). It is perhaps worth noting that while CPR theory has contributed to the development of thought on the institutional problem in natural resources management, the CPR management models do not provide a comprehensive explanation for the emergence of IWRM in Southern Africa.

Ostrom (1990: 38) identifies three aspects to the problem of collective action in the use of CPR, namely, 'interdependence', 'independent action' and 'collective action'. Interdependence is the basic characteristic linking the numerous co-users of CPR. Ostrom states:

When multiple appropriators are dependent on a given CPR as a source of economic activity, they are jointly affected by almost everything they do. Each individual must take into account the choices of others when assessing personal choices...the key fact of life for co-appropriators is that they are tied together in a lattice of interdependence so long as they continue to share a single CPR.

In making such choices, Ostrom considers that co-appropriators might act in two ways. They might take independent action or collective action. If they take independent action in situations where a CPR generates scarce resource units, the total benefits they obtain

will usually be less than if they had coordinated their strategies. The worst-case scenario is that independent action might result in the destruction of the CPR itself.

Given these three aspects, CPR Theory seems to have been developed by two broad schools of thought on how to resolve the problems of collective action in the use of CPR. One school has generated models predicated on the assumption that co-appropriators tend to take independent action; these models are herein referred to as the 'Independent Action' models. The other school has put forward models based on the assumption that collective action is possible, and has been observed in many situations; these models are herein termed the 'Co-management' models. Of the two groups of CPR management models, the co-management models seem to have greater implications for the formulation of institutional arrangements for IWRM. The following two sub-sections review the elements, assumptions and impacts of the models generated by the two schools of thought.



2.3.1 INDEPENDENT ACTION MODELS: BASES FOR CONVENTIONAL RESOURCE MANAGEMENT APPROACHES

2.3.1.1 Overview of the Models

These models include Garret Hardin's *Tragedy of the Commons* allegory, game theories such as *The Prisoner's Dilemma* and the Rational Choice Theory. The central theme of all these models is 'free-rider problem', whereby in a situation where one person cannot be excluded from the benefits that others provide each person is motivated not to contribute to the joint effort, but to free ride on the efforts of others (Ostrom, 1990). Although the models sought to clarify the challenges to collective action, much of the analysis tended to focus on pessimistic interpretations of why cooperation should fail, instead of trying to understand the ways in which successful collective action is organized (Bruns & Meinzen-Dicks, 2000). Hardin's allegory seems to have initiated much of the debate on the CPR problem.

In his *Tragedy of the Commons* allegory, Hardin sought to show how rational, self-interested individuals would over-utilize a pasture (or other common property resource). He argued that in a situation where access to finite resources was “open to all”, each “rational” individual would seek to maximize his own direct benefit while bearing only a share of the costs resulting from overexploitation (Ostrom, 1990; Knudsen, 1995). Hardin’s essay further suggested that private ownership of finite resources was a more effective way of avoiding the tragedy of the commons.

The Prisoner’s Dilemma game, in its basic form, transposes the CPR problem to a hypothetical situation in which two prisoners are placed in separate cells. According to Ostrom (1990), *The Prisoner’s Dilemma* game is conceptualized as a non-cooperative game in which all players [or prisoners] possess complete information; that is, they know the complete structure of the game and the payoffs attached to the outcomes. However, they cannot communicate. If they can, their verbal agreements are not binding. Each player has a dominant strategy – the one that the player is better off choosing. This strategy is to defect, irrespective of what the other player chooses. When both players opt for their dominant strategy - which is likely, given the assumption that the players act primarily in self-interest - the outcome is an equilibrium that is the third-best result for both (Figure 2.1). Ostrom (1990: 5) concludes, “The paradox that individually rational strategies can lead to collectively irrational outcomes seems to challenge a fundamental faith that rational human beings can achieve rational results”.

		2 nd Person	
		Cooperate	-2/2
1 st Person	Cooperate	1/1	-2/2
	Defect	2/-2	-1/-1

FIGURE 2.1 PRISONER'S DILEMMA GAME

The Rational Choice Theory seems to derive largely from Ohlson's (1965 cited in Ostrom, 1990: 5,6) work on *The Logic of Collective Action*. According to Ostrom (1990) Mancur Ohlson set out to challenge the "grand optimism" that individuals with common interest would voluntarily act so as to try to further those interests. Ohlson argued that "unless the number of individuals is quite small, or unless there is coercion or some special device to make individuals act in their common interest, rational, self-interested individuals will not act to achieve their common or group interest" (Ohlson, 1965: 2 cited in Ostrom, 1990: 6).

According to North (1990) this theory builds – explicitly or implicitly – upon conceptions of human behaviour and is based on the fundamental assumption of scarcity and hence competition. The argument within this formulation is that human beings are rational beings, and when they are faced with uncertainty due to scarcity and competition, the rational choice they tend to make is to act in self-interest.

2.3.1.2 Impacts of the Models on Resource Management Approaches, Policy and Practice

The line of argument advanced by the 'Independent Action' Models – particularly with regard to the human tendency towards self-interest - seems to have elicited the view that environmental problems cannot be solved through cooperation and that there was need therefore for coercive force to be used in order to ensure compliance with rules (Ostrom, 1990). Contrary to Hardin's conclusion, however, this view considered that governments, rather than private interests, could legitimately exercise such control.

The pessimistic scenarios portrayed by Independent Action Models have often been used to justify either direct control by the state or else division into private property (Bruns & Meinzen-Dick, 2000; Knudsen, 1995; Ostrom, 1990). With regard to water resources management in Southern Africa, the traditional approach has attempted to fit water into political boundaries rather than design institutions that fit the resource

(Savenige & van der Zaag, 2000). In Zimbabwe, the water policies prior to 1998 have vested authority over resources upon the state, which in turn has granted some water rights to private individuals (Murungweni, 2001).

The arguments advanced by the Independent Action models seem to be echoed by the Realists and New Realists, and approaches such as Mercantilism or Economic Nationalism and the “doomsday approach”. The same arguments are also resonant in Neo-liberalist perspectives, which are closely related to Neo-classical Economics Theory.

The doomsday approach emphasizes over-population and over-exploitation of resources as the causes of resource depletion and conflict, and urges for measures to stem environmental catastrophe. According to Swatuk & Vale (2000) works such as Thomas Homer-Dixon’s have advanced “doomsday approach”. Homer-Dixon assumes self-interest by actors and argues that in a situation where change takes place and resources scarcity occurs two processes are offset. These are resource capture by those with the means to do so and the economic marginalisation of those without. The failure to adapt to changes in the resource regime results in various social problems, which in turn might offset conflict. Most often, such conflict is at the sub-national level.

With specific regard to the problem of sharing water resources in Southern Africa, the argument put forward in models such as the Tragedy of the Commons perspective has merely been used to bolster centrist notions of security. The doomsday approach can be linked to the strand of thinking that water scarcity is potentially the greatest future cause of conflict within the region (Ashton, 2000; Swain, 2000; Elhance, 1999; Pallett, 1997; Ohlsson, 1995). Unlike the Independent models, however, Homer-Dixon qualifies his argument and states that the causes of resource-related conflicts involve a more complex interplay of factors than just resource scarcity; and many communities will seek out strategies for cooperation before they will opt for conflict.

The discrepancy in the views expressed by Homer-Dixon and the perspective that emphasizes the likelihood of water-related conflicts is probably due to the varied persuasions of the scholars who analyse the resource management problem. For example, Realists conceive world politics as power relations among states (Cox, 1997). The Realist approach, like the Mercantilist approach, emphasizes the importance of national self-interest in formulating economic policy (McGowan & Nel, 1999: 23). The political attitude of Realism is, "The very survival of one's state is a value that overrides all other values in international affairs" (Nel, 1999: 54). New Realism advances the argument of Realism, but broadens the range of determining forces beyond state power (Cox, 1997).

The first assumption of the Realist, New Realist and Mercantilist approaches is that states (and other actors) are selfish actors who always seek to maximize their own interests, even at the cost of risking benefits that more than one actor can share ((Nel, 1999; Cox 1997). The second assumption is that the distribution of power between the actors in the international system is the one factor that has the biggest effect on what happens in international relations (Nel, 1999; Cox, 1997). According to Nel (1999), the argument by these approaches is that states act selfishly not because they are evil, but out of rational choice; it is the anarchic structure of the international system that condemns them to selfishness and self-reliance.

Given such positions, assumptions and arguments, it becomes clearer perhaps that some within the Independent Action school of thought do not, by omission or commission, acknowledge the possibility that cooperation might be a more likely option for the state, private sector and civil society actors at both the inter-state and sub-national levels.

2.3.1.3 Criticism of the Models and their Interpretations

Knudsen (1995) observes that the wide acceptance of Hardin's argument, in particular, among resource managers, bureaucrats and state agencies probably invoked the

“unending criticism and condemnation” of his work. Part of the discourse that followed Hardin’s Tragedy of the Commons perspective centred around issues of common property regimes and rights to resources. The main criticism was that Hardin’s conception of common property failed to take into account the fact that common property is not synonymous with open access (Ostrom, 1990; Knudsen, 1995).

Dispelling the notion of open access, Bromley (1991: 2 cited in Knudsen, 1995: 5) argues, “In a situation where nobody lays claim to a resource, we can no longer talk about ‘property’”. He therefore distinguishes between four different types of property regimes, namely: state property, private property, common-property and non-property. The non-property regime is also referred to as “open access”.

Bromley (1992) further states that there have been misinterpretations of the concept of ‘common-property resource’, which is distinct from *res nullius* resources that have no recognized property rights. He asserts that there is no such thing as a common property resource, but that there are resources that are managed and controlled as common property, and therefore they have property right.

Ostrom (1990) has strongly criticized the Independent Action models primarily on the basis that those attempting to use the models as a basis for policy prescriptions have often achieved little more than a metaphorical use of the models. The reason for this is that the models have not been used mainly for the usual purpose of rapidly conveying information in a graphic form, but to invoke grim images of “individuals caught in an inexorable process of destroying their own resources”.

2.3.2 COLLECTIVE ACTION MODELS: BASES FOR CO-MANAGEMENT APPROACHES

More recently, there has been recognition that state control over CPRs has increasingly become untenable due to the high costs of policing and other factors. The prevailing

view is that the state-centrist approach to natural resources management, in particular, has failed to provide adequate frameworks for the resolution of resource-related conflicts, the promotion of cooperation among various 'stakeholders', and the enhancement of human and environmental security. This view has resulted in a shift towards participatory or "co-management" approaches.

Co-management is defined by the 1996 Montreal World Conservation Congress as "a partnership in which government agencies, local communities and resource users, non-governmental organizations and other stakeholders share, as appropriate to each context, the authority and responsibility for the management of a specific territory or a set of resources" (IUCN, 1996). Co-management models are a manifestation of the shift away from the "content of management policy and the selection of the most appropriate regulatory mechanisms to the reform of the institutional frameworks within which policies are framed and implemented and, in particular, to the realignment of the relationships between the regulators and the resource users" (Symes, 1997 cited in Hara, 1999: 9).

Whereas the Independent Action models focus on why collective action does not work, co-management models argue that collective action is possible, as shown by cases of collective action in various communities in the world. Co-management models are based on the assumption that co-appropriators are able to subsume individual interest for the good of the broader user community. Within the framework of the co-management approach, the institutional problem with CPR management therefore relates to organizing change from a situation where the numerous appropriators act independently to one in which they adopt coordinated strategies to obtain "higher joint benefits or to reduce their joint harm" (Ostrom, 1990: 39) or "an optimal rate of production or consumption overall" (Oakerson, 1992: 41). The problems of coordination, however, generally become apparent when there is some significant change in the pattern and/or level of use (Oakerson, 1986). Such a change is often associated with increasing scarcity.

The adoption of co-management arrangements has involved a gradual process of decentralization of authority over natural resources from the traditional state center to stakeholders at both the local and the international levels. With regard to co-management arrangements that involve the state and the local level resource users and stakeholders, devolution of authority has often been a process in which the local users and stakeholders have progressively assumed increasing control or functions and decreasing dependence on external institutional actors (Little, 1994; Borrini-Feyerabend, 1987). Figure 2.1 captures some of the features of the evolution of co-management arrangements that have been put forward by Borrini-Feyerrabend (1987).

A common view is that the importance of local participation increases with the successive stages of the process, and local actors tend to participate more actively in the implementation than the design stages of co-management (Finsterbusch & van Wicklin, 1987 cited in Manikutty, 1997: 118; Little, 1994).

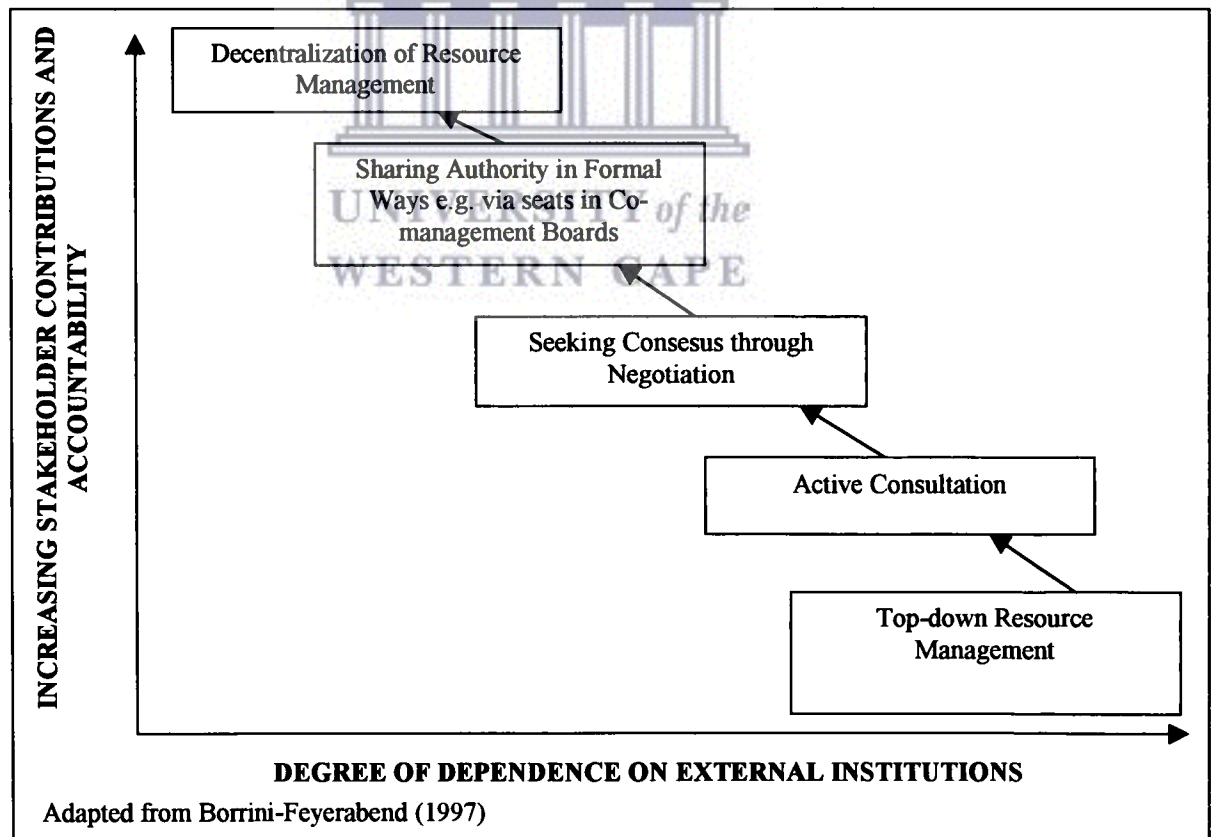


FIGURE 2.2 DEVELOPMENT OF CO-MANAGEMENT INSTITUTIONS: CONCEPTUALIZATION OF DECENTRALIZATION PROCESS

2.4 DESIGN CRITERIA FOR EFFECTIVE AND SUSTAINABLE CO-MANAGEMENT INSTITUTIONS

Formulations regarding the critical design criteria for CPR institutions have been developed by scholars like Oakerson (1985; 1992) and Ostrom (1985; 1990). More recently, scholars such as Dovers & Dore (Dovers, 2001) have come up with institutional design criteria that build on the conceptual frameworks developed by various scholars (Ostrom, 1985; Oakerson, 1985; Bromley, 1985) and derive from the testing of these previous formulations in specific situations. This section reviews the frameworks put forward by Ostrom (1990) and Dovers & Dore (Dovers, 2001), as well as the attributes identified by other scholars.

Ostrom's (1990) framework consists of design criteria illustrated by long-enduring CPR institutions (Table 2.1). These criteria include: clearly defined boundaries, Congruence between appropriation and provision rules and local conditions, collective choice arrangements, monitoring, graduated sanctions, conflict resolution mechanisms, minimal recognition of rights to organize, and for CPRs that are parts of larger systems, nested enterprises.

To these principles, Hackett (1992) adds the heterogeneity of appropriators as another critical factor. He states that in cases where appropriators have heterogeneous objectives, CPR governance becomes difficult when resources become scarce. The collective choice problem is solved by appropriators agreeing on a reduced overall level of appropriation intensity and fashioning a set of rules for allocating appropriation rights consistent. He also states that in such cases, appropriators should attempt to implement governance by investing in monitoring and enforcement. In Ostrom's (1990) view, appropriators play a major role in monitoring each other's activities, and external agents are seldom used. The view in this study, however, is that this solution works effectively when the resource user community is small enough and the appropriators have a relatively high degree of common background.

With regard to conflict resolution mechanisms, Ostrom (1985) states that long-enduring CPR institutions have internally adaptive institutional arrangements. Such arrangements make the creative use of conflict so that the source and extent of problems could be discovered. Such use of conflict could lead participants of a user group organization to make new rules governing the use patterns when old rules do not appear to serve the community of users well.

With regard to adaptive CPR institutions, Dovers & Dore (1999 cited in Dovers, 2001) put forward a framework of requisite attributes that requires 'an adaptive approach' to designing and maintaining policy processes and institutions (Table 2.2). The core principles of an adaptive are: 'persistence', 'purposefulness', 'information sensitivity', 'inclusiveness' and 'flexibility'.

Table 2.1 Design principles illustrated by long-enduring CPR institutions

<ol style="list-style-type: none"> 1. Clearly defined boundaries Individuals or households who have rights to with draw resource units from the CPR must be clearly defined, as must the boundaries of the CPR itself. 2. Congruence between appropriation and provision rules and local conditions Appropriation rules restricting time, place, technology, and/or quantity of resource units are related to local conditions and to provision rules requiring labour, material, and/or money. 3. Collective choice arrangements Most individuals affected by the operational rules can participate in modifying the operational rules. 4. Monitoring Monitors, who actively audit CPR conditions and appropriator behaviour, are accountable to the appropriators or are the appropriators. 5. Graduated sanctions Appropriators who violate operational rules are likely to be assessed graduated sanctions (depending on the seriousness and context of the offence) by other appropriators, by officials accountable to these appropriators, or by both. 6. Conflict resolution mechanisms Appropriators and their officials have rapid access to low-cost local arenas to resolve conflicts among appropriators or between appropriators and officials. 7. Minimal recognition of rights to organize The rights of appropriators to devise their own institutions are not challenged by external government authorities. <p><i>For CPRs that are parts of larger systems:</i></p> <ol style="list-style-type: none"> 8. Nested enterprises Appropriation, provision, monitoring, enforcement, conflict resolution, and governance activities are organized in multiple layers of nested enterprises.
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Simplified from Ostrom (1990: 90)

Table 2.2 Attributes of (Design Features for) Adaptive Institutions: Dover & Dore (1999)

1. Purposeful
2. Long-lived
3. Properly resourced
4. Statutory Basis
5. Independence
6. Multi-functional
7. Applied
8. Integrative
9. Coordinating
10. Participatory
11. Ability to compare
12. Experimental
13. Politically supported

Although attempt has been made to incorporate the key elements of formulations such as these, various scholars (Carmo Vaz & Lopez-Pereira, 2000; Leestermaker, 2000; van der Zaag & Savenige, 2000; Rudrengren *et al*, 1997) have observed that there persist institutional weaknesses that undermine the progress made towards IWRM within Southern Africa. The next section explores literature on the experiences by Zimbabwe's catchment level institutions during the pilot phase of the design and implementation of the new water policy.

2.5 PILOT PHASE EXPERIENCES BY ZIMBABWE'S CATCHMENT LEVEL INSTITUTIONS

Prior to the implementation of IWRM policy in all the designated Catchment Areas of Zimbabwe, pilot catchment level institutions were established in the Sanyati and the Mazoe Catchment Areas (Latham, 2000; Sithole, 2000). Evaluations of the pre-implementation phase by various scholars (Derman & Ferguson 2000; Latham, 2000;

Ndamba 2000; Sithole 2000; Nhidza 2001) have noted the difficulties of translating political will and water sector reforms into effective and coordinated practice at the lower levels.

Some of the difficulties relate to the persistence of the sectoral approach (Derman, 1999; Ndamba, 2000; Nhidza, 2001) and the lack of effective coordination, communication, stakeholder participation and monitoring and enforcement (Ndamba, 2000). The observed difficulties probably relate to issues of legitimacy, accountability, representation, transparency, institutional paralysis (or the inability to develop organizational protocol and culture that is appropriate to the water reforms) and, in particular, power politics among the various stakeholders.

2.5.1 LACK OF EFFECTIVE CO-ORDINATION

A major problem in policy implementation has been lack of coordination of IWRM due to the persistence of the sectoral approach, which seems to counter the new trend towards integration. The sectoral approach creates gaps between policies, plans and practices (Pallett, 1997; Leestermaker, 2000), such that new policies that innovatively deal with the complex nature of water resources management may be difficult to implement by the sectoral institutions (Savenige & van der Zaag, 2000).

In the case of Zimbabwe, the sectoral approach has probably contributed to the lack of institutional co-ordination identified by Derman (1999), Ndamba (2000) and Nhidza (2001) as one of the missing elements in policy implementation. Derman (1999) cites the contradictions between the new Water Act administered by the Zimbabwe National Water Authority (ZINWA) and the Stream Bank Cultivation Act administered by the Department of Natural Resources under the Natural Resources Act. Nhidza (2001) cites the lack of co-ordination between water sector reforms and institutional reforms in local authorities, which are one of the key stakeholders in the water sector, as responsible for

the problems of achieving efficiency and sustainability by Catchment and Sub-Catchment Councils.

2.5.2 LACK OF EFFECTIVE COMMUNICATION

There have been some operational constraints due to differences in technological capacity among the various watercourse states (Savenige & van der Zaag, 2000). Nonetheless, there have been initiatives aimed at enhancing technical co-operation in water resource management such as UNESCO's FRIEND (Flow Regimes from International Experimental and Network Data) Project and the FAO's GIS Hydrology for Africa Project (Rudengren *et al*, 1997). There has also been the EU-funded SADC-HYCOS project that seeks to improve and provide an efficient system for the collection, processing and dissemination of hydro-meteorological data (Soderstrom, 2001). In view of disasters such as droughts and floods that occur within the region, such communication networks potentially contribute to the alleviation of threats to security within the region.

The regional technological constraints possibly adversely affect IWRM-related communication in Zimbabwe. However, an important aspect of the communication problem is the lack of effective communication between the public, private and non-governmental (NGO) institutional actors at the various levels of the water governance hierarchy (Ndamba, 2000). A number of case studies have contradicted the assumption by the new governance framework that there is free flow of information between the various levels (Sithole, 2000).

2.5.3 LACK OF EFFECTIVE STAKEHOLDER PARTICIPATION

Although the various regional policy reforms have underscored the importance of public participation in water-related decision-making, there seem to be difficulties in

developing appropriate protocols that bring together the cultures of bureaucrats, technocrats, and other institutional actors. In the Zimbabwean context, Ndamba (2000) states that there is a lack of effective stakeholder participation. Sithole (2000) echoes this view when she observes that water-related discourses at the Catchment and Sub-Catchment levels effectively remained top-down. Communal area representatives have particularly been skeptical about their purported role in IWRM as a result. Nhidza (2001) cites the lack of stakeholder participation as having perpetrated animosities over the construction of the Mtshabezi Dam and the Osborne Dam to supply water to the Cities of Bulawayo and Mutare respectively. In the case of the latter, the City of Mutare eventually opted for the Pungwe pipeline project.

2.5.4 LACK OF EFFECTIVE MONITORING AND ENFORCEMENT

While there have been policy shifts towards a balanced emphasis on both supply-side and demand-side management (Rudengren et al, 1997) and on surface and groundwater resources within a river basin, there has been lack of capacity to implement, monitor and enforce the water policy reforms. Ohlsson (1995) observes that the Southern African region has highly skilled technical experts but much of the technical expertise within the region is yet to be fully utilised by governments. The problem is therefore partly related to the persistence of the traditional pre-occupation with water supply management, such as dam building and water transfers, in order to even out fluctuations in water availability (Pallett, 1997). To a significant extent, the lack of adequate monitoring and enforcement in Zimbabwe (Ndamba, 2000) is probably also due to insufficient funding for such activity.

The lack of effective enforcement is related to the problem balancing the equity and efficiency ideals, identified by Savenige & van der Zaag (2000). The global and international frameworks have stipulated the need for efficiency in the provision of water supply, which includes the pricing of water at its economic value. At the same time, these frameworks have declared access to clean water a basic human right that

governments are obliged to ensure. Urban water supply management in many regional countries has traditionally applied block tariffs and cross-subsidies as demand control and cost recovery mechanisms (van der Zaag, 2001b), while rural water has often been heavily subsidized.

The first difficulty in meeting the efficiency ideal is that the greater proportion of the human population in Southern African countries is cannot afford to pay the economic price of water, even at marginal cost. Thus, the required pricing of water compromises the equity ideal. Conversely, emphasis on the equity ideal compromises the efficiency ideal. If a given water governance structure chooses either way, the security of people and their livelihoods or the security of the economy becomes compromised. This poses a moral dilemma for local enforcement agencies.

The difficulty in meeting the efficiency ideal, however, also emanates from the inability by some governments to pay the costs of overhauling the inadequate and obsolete urban water supply and reticulation systems that were built to cater for smaller colonial populations. Thus, water loss due to frequent system breakdowns is a common feature that continually compromises efficiency in the use of water. International donor agencies have provided the funding needed for improvements in urban water use in some SADC countries. An example is the funding of Mozambique's Urban Water Supply and Sanitation Programme by DANIDA (Soderstrom, 2001). In the case of the Pungwe-Mutare Water Supply project in Zimbabwe, van der Zaag (2001a) states that unaccounted for water loss within the project has been estimated to be about 40% of the total transfer allocation to the Mutare City. Nhidza (2001) state that there is a linkage between inefficiency and lack of local authority coordination between the water and financial sectors of the Municipality of Mutare.

2.6 CONCEPTUAL FRAMEWORK

The institutional problem in articulating Zimbabwe's new water policy can be conceived in terms of the CPR institutional design criteria identified by scholars such as Ostrom (1990) and Dovers & Dore (1999 cited in Dovers, 2001). However, the shift towards participatory approaches in water resources management and governance requires that the institutional problem be conceived also in terms of stakeholder and gender politics. Towards this end, this study also examines stakeholder interests and gender roles within the new water resources management framework in terms of the divergence between the "politics of production" and the "politics of consumption".



CHAPTER THREE

OVERVIEW OF THE SAVE CATCHMENT COUNCIL AND THE PUNGWE SUB-CATCHMENT COUNCIL

3.1 BACKGROUND TO THE STUDY AREA

3.1.1 LOCATION AND SPATIAL DELINEATION OF THE STUDY AREA

The Save Catchment Area is located in eastern Zimbabwe (Figure 3.1). The portion of the Pungwe River Basin that falls under the jurisdiction of the Pungwe Sub-Catchment Council is located in the Eastern Highlands of Zimbabwe, along the border with Mozambique. Although the Sub-Catchment Area has been classified as a constituent of the Save Catchment Area, the Pungwe River Basin is separate from the Save River Basin.

The Pungwe River is 400km long from its source in the Inyangani Mountains in the Eastern Highlands of Zimbabwe to its estuarine mouth in the Indian Ocean coast of Mozambique (van der Zaag, 2001c). While Zimbabwe and Mozambique share the Pungwe River Basin, the part of the basin within eastern Zimbabwe constitutes a mere 5% of the total basin area of 31 000 square kilometres (van der Zaag, 2001c). The rest of the basin and approximately 340km of the river length are situated within the central region of Mozambique. Despite the relatively small spatial extent of the portion of the Pungwe Basin located in Zimbabwe, this part of the basin contributes a significant proportion of the river's total discharge volume. This is due to the relatively high precipitation received in the area.

3.1.2 OUTLINE OF THE PUNGWE MUTARE WATER SUPPLY PROJECT

The Pungwe Mutare Water Supply Project is an interbasin water transfer project (Figure 3.2) aimed at catering for the domestic water needs of people in the Mutare City Council Area (van der Zaag, 2001b). The City of Mutare is located within the adjacent Save River catchment area. The project involves the withdrawal of 0.7 cubic metres of water by gravity from the Pungwe River via a 4.3 kilometre long tunnel from the Pungwe River to an outlet at the Sanyanga Gardens (Skanska, 1999). From there, the water flows along the Nyakupinga Tributary of the Odzi River to the Odzani Treatment Works (Mazambani, 1997). The treated water is then transported to the City of Mutare's Christmas Pass Reservoir through a 79 kilometre long pipeline (Norconsult, 2000).

3.1.3 NATURE OF THE WATER AVAILABILITY PROBLEM

Within Zimbabwe, water scarcity appears to affect areas adjacent to the Pungwe Basin more than areas within the basin (Figure 3.2). The Nyanga communal and resettlement areas to the north of the Pungwe Basin have particularly high surface water deficits (Katerere, 1997; Mazambani, 1997). The City of Mutare in the adjacent Odzi Sub-Catchment Area of the Save River Basin has envisaged possible water shortages due to urban population growth and an increase in industrial water demand. People living in the Mutasa Communal Lands, also located in the Odzi Sub-Catchment Area, have expressed interest in securing access to the Pungwe water for irrigation purposes. There is possible increased demand for Pungwe water from stakeholders within the portion of the Pungwe River Basin in Zimbabwe. These stakeholders include the Hauna Growth Point and the Small-Scale Commercial Farming sector in the Honde Valley.

In Mozambique, the water scarcity problem affects Beira City during the dry season, while the problem of flooding almost exclusively affects the lower reaches of the Pungwe floodplain during periods of high rainfall (van der Zaag, 2001a). Water shortages in Beira are due to the saltwater intrusion that occurs within the 80km long stretch of the river, where the intake pipe that supplies the city is located. Water

shortage is also due to the inadequacy of the city's water supply infrastructure to cater for the potable water needs of the population. Excess water in the lower Pungwe poses as major a problem as water scarcity in Beira City. Although the potential of the Pungwe to inundate extensive areas within the floodplain is recognized, there are as yet inadequate disaster mitigation strategies. Consequently, the security of human lives, livelihoods, property and commercial developments, such as the estuarine prawn fisheries, the Mafambissa Sugar Estate and the proposed Industrial Free Zone north of Beira, continue to be threatened.

Given that the upper portion of the Pungwe River basin has high flow volumes throughout the year, the sharing of the Pungwe water would seem not to constitute a major problem. However, there are sub-national and interstate problems of sharing the Pungwe water owing to the existence of both water scarcity and excess in areas within and adjacent to the basin.

At the sub-national level in Zimbabwe, the issue of access to water is closely linked to the issue of access to land, as both constitute the resource base for production and livelihood generation. The historical allocations of water and land have tended to favour certain minority groups, at the expense of the larger less affluent rural population. Thus, the devolution of water management authority and the redistribution of water resources have taken place simultaneous to the Zimbabwe government's fast-track land resettlement programme. The politics of sharing water and land resources in Zimbabwe and the geographical characteristics of the interbasin project both point to the existence of a complex water governance situation that requires appropriate institutions to resolve potential conflicts and foster cooperation over the sharing of Pungwe water among the various stakeholders.

3.2 UNFOLDING INSTITUTIONAL ARRANGEMENTS FOR THE INTEGRATED MANAGEMENT OF THE PUNGWE WATERCOURSE

The geographical characteristics of the interbasin project point to the existence of a complex water governance situation that requires appropriate institutions to resolve potential conflicts and foster cooperation over the sharing of Pungwe water among the various stakeholders. Towards this end, a number of institutional arrangements have been put in place.

At the bi-lateral level, the Joint Water Commission Concerning Water Resources of Common Interest has recently been established between Mozambique and Zimbabwe (Zimbabwe, 2001). The Joint Commission represents the only formal watercourse-wide management institution to emerge in the Pungwe Watercourse. To date, the Joint Commission has facilitated the agreement between Mozambique and Zimbabwe over the Pungwe-Mutare Water Supply Project.

At the local level in Zimbabwe, the Pungwe Sub-Catchment Council was established in 1999 as a constituent of the neighbouring Save Catchment Council (van der Zaag, 2001c). Although at the time of the study the Pungwe Sub-Catchment Council was not yet fully operational, effort had been made towards representation of the various water user sectors in the Zimbabwean portion of the watercourse. The Pungwe Sub-Catchment Council was represented in the Joint Commission by the Save Catchment Council representatives elected into the ZINWA Board.

In the Mozambican portion of the Pungwe Watercourse, ARA-Centro, a regional agency of the Department of Water Affairs (DNA), was established in 1998 as the responsible watercourse management authority (Carmo Vaz & Lopez-Pereira, 1998; van der Zaag, 2001c). ARA-Centro seems to be in the initial stages of operation.

The agreement between Mozambique and Zimbabwe has permitted Mutare City to use the water abstracted from the Pungwe for primary purposes only. Given the problems of water scarcity and excess, and the possible increases in primary, industrial and agricultural demands within upstream Zimbabwe and downstream Mozambique, cooperation in the sharing of Pungwe water indeed requires effective institutional mechanisms for dealing with the potential sub-state and interstate conflicts. The recent shifts at the local and bi-lateral levels towards the ICM are probably timely. An important question, however, is whether the newly emerged institutional arrangements are resilient, robust, efficient, and embedded enough to ensure the equitable, efficient and sustainable implementation of IWRM in the context of developments such as the Pungwe-Mutare Water Supply Project.

3.2.1 FORMATION OF THE SAVE CATCHMENT COUNCIL AND THE PUNGWE SUB-CATCHMENT COUNCIL

The Save Catchment Council and the Pungwe Sub-Catchment Council were formed in July 1999 with funding from the Swedish International Development Cooperation Agency (Sida), and they became fully operational in January 2001. According to an earlier plan, the inception period for the councils had been scheduled for six months, to allow for the processes of policy awareness and the election of stakeholder representatives. The inception period was subsequently reduced to six weeks.

Two reasons were given for the reduction of the inception period. The first was that the IMF had insisted on the government to cut expenditure on the public sector through devolution of management responsibility to local stakeholders. The second reason was that the government's fast-track land resettlement programme required that the devolution of authority over water resources be accelerated to keep pace with the land redistribution process.

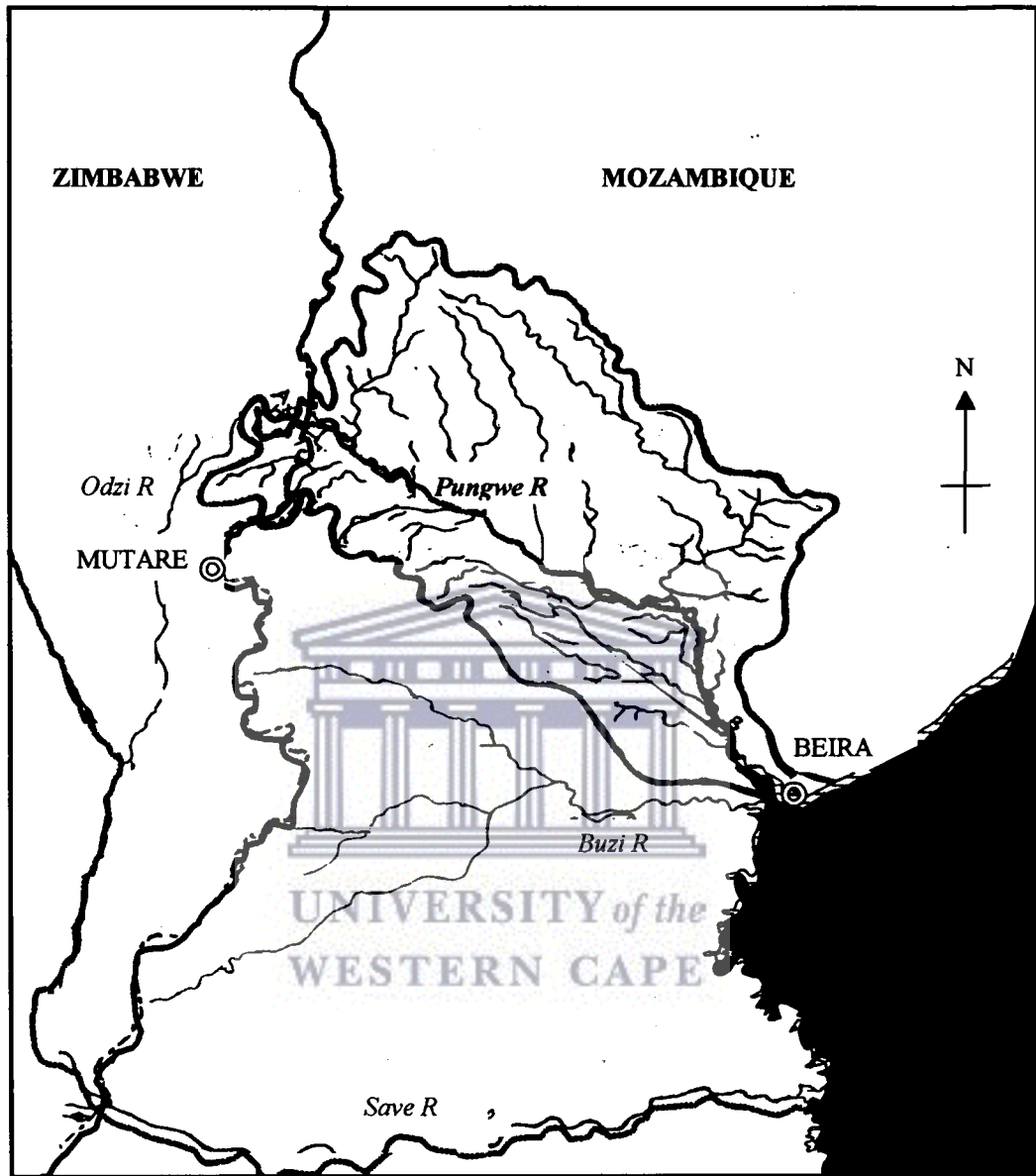


FIGURE 3.1 LOCATION AND SPATIAL DELINEATION OF THE PUNGWE RIVER BASIN

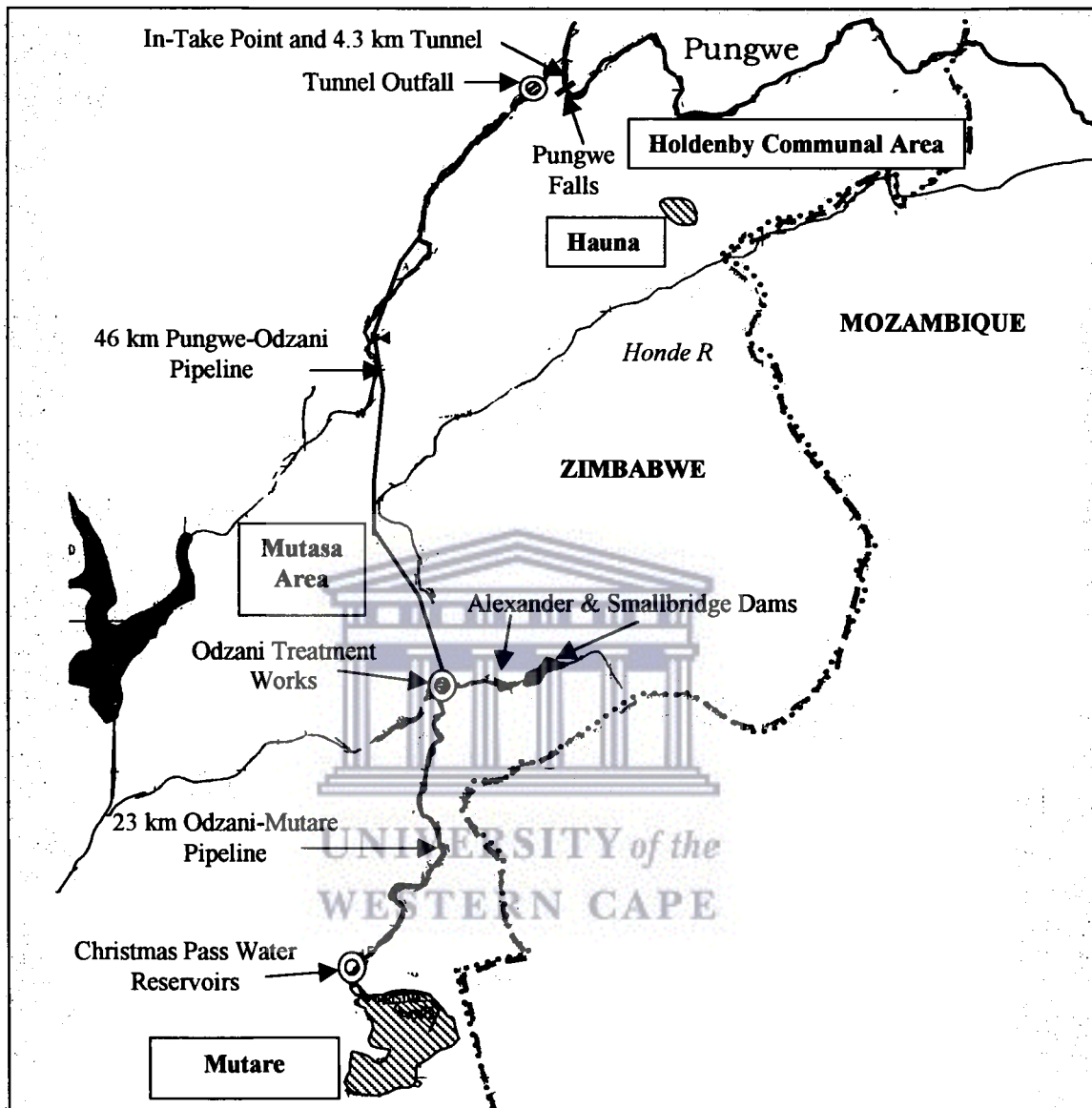


FIGURE 3.2 PUNGWE-MUTARE PIPELINE: RELATIVE LOCATION OF STAKEHOLDERS WITH POTENTIAL TO INCREASE DEMANDS ON PUNGWE WATER IN ZIMBABWE

Consequently, the Save Catchment Council and the Pungwe Sub-Catchment Council were formed before stakeholders had been made adequately aware of the new water policy. The acceleration of the devolution process also meant that there was insufficient

time to prepare for the election of stakeholder representatives. The councils were ultimately composed of representatives who were selected according to various criteria, rather than popular choice.

3.2.2 STRUCTURE OF STAKEHOLDER REPRESENTATION IN THE SAVE CATCHMENT AND THE PUNGWE SUB-CATCHMENT COUNCILS

The major water users in the area of jurisdiction of the Save CC and the Pungwe SCC included the farming sector, local authorities such as Mutare City Council and Hauna Business Centre, and the forestry sector. Other water users included the tourism sector and an envisaged hydro-electricity generation plant. The mining sector was said to be relative small. Despite the observed range of water users, stakeholder representation in the Save CC and the Pungwe SCC was dominated by commercial agricultural interests. The stakeholders represented largely included large-scale commercial farmers, small-scale commercial farmers and communal area farmers.

There was no representation of the forestry and tourism sectors and the tea estates, despite that these were major stakeholder producers within the area. There was no evident representation of resettlement area farmers despite that this was a rapidly growing sector due to the government's fast track land redistribution programme. The mining sector was not represented either, owing to its relatively low significance within the area. Local administrative authorities represented primary water user interests within the Save Catchment and Pungwe Sub-Catchment Areas. Attendance of council meetings by some local authorities tended to be erratic or relatively low, however.

Within the Pungwe SCC, the farmers were represented according to membership of particular crop growers' associations. The stakeholder farmers represented in the Pungwe SCC included members of farmers' associations such as the Coffee Growers' and the Banana Growers' Associations, members of agricultural unions such as the Zimbabwe Farmers' Union (ZFU) and the Commercial Farmers' Union (CFU). There

were also members of various irrigation schemes including Makunike, Mandeya, Gatsi, Ruda and Murara. An elected local government councilor represented the primary and other commercial water users in the Hauna Business Centre, while a traditional leader represented the primary water users of the Mutasa Communal Area. The mode of representation resulted in the farming sector occupying eight of the ten seats in the SCC.

Given the dominance of the farming sector in the catchment management institutions, much of the debates within the Save CC and the Pungwe SCC tended to revolve around the issue of payment for the use of water, mostly for irrigation purposes. Although the councilors in the two structures recognized, in principle, the need for users to pay for water, many of the constituencies that they represented apparently did not. Communal and small-scale irrigation farmers put forward various arguments against payment for water. These included that water is God-given, and had been used by those farmers for centuries without the need to pay for it. They also included that it was unfair for those already in possession of water rights that were accorded under the previous water law to pay the same additional amount money for water permits as those who had never held any water rights. What was interesting was that the arguments were gender-neutral and they largely failed to give a nuanced grasp of the problems of paying for water in rural communal areas. To some extent, this seemed to owe to the nature of gender representation in the council meetings.

3.2.2.1 Gender Representation in Decision-Making Structures

Despite that women have been identified by Zimbabwe's Water Resources Management Strategy as playing a central and multi-faceted role in the provision, use and safeguarding of water, their involvement in the water-related decision-making structures was very low. The Save CC was wholly composed of men. Within the entire Save Catchment Area, women councillors constituted 3.5% of the total number of SCC councillors. Of the seven SCCs, the Pungwe SCC had made the greatest effort to actively involve women in decision making and planning, with women occupying 20% of the SCC seats out of the council's gender representation target of 60%.

In addressing the issue of gender representation, the Pungwe SCC could be seen as having been robust enough to adopt a gender-responsive approach, against the prevailing tide of social attitudes that militate against women's involvement in strategic decision-making. However, the inclusion of women in the SCC was largely due to the women's action in staking out a claim in the decision-making process (Text Box 4.1), which appears to have been supported by the donor agency.

Such inclusion of women in decision-making structures, however, does not automatically ensure that women's interests are voiced, as there exist power relations between men and women that result in unequal gender voices. Primary observation of the decision-making process by the Pungwe SCC indeed showed that the women councilors remained largely silent throughout the meeting, and when prompted to make contribution, they were reticent.

A follow-up in-depth interview with the woman councilor representing the Gatsi Scheme women irrigators showed that the councilor was relatively more vocal, confident and proficient in expressing the concerns of her constituency outside the male-dominated meeting. By contrast, the second woman councilor, who stated that she represented women farmers in the Pungwe Sub-Catchment Area in general, was not clear in explaining the nature of the women's concerns that she purported to represent. It also seemed that the particular councilor might have been co-opted by the Pungwe SCC rather than elected by the vast majority of women stakeholders she was supposed to represent.

A further follow-up to the issue of women's concerns within the Pungwe Sub-Catchment Area was carried out through informal interviews at the Pimayi Fruit and Vegetable Market in the Mparutsa Ward. The women respondents expressed a concern that while the amount of money that they could earn from marketing fruit and vegetables ranged from Z\$3000 to Z\$10000 per month, they lacked reliable transport to take their produce to markets in the larger urban areas. Consequently, they were

compelled to sell their produce below the market price to transport owners from distant places. This problem had not emerged in the Pungwe SCC meeting or interviews with the male and female councilors. Contrasted with the heated discussions on the requirement for users to pay for water, it was not clear how the Pungwe SCC expected the women farmers in particular, who seemed more affected by lack of transport, to pay for water without the necessary support to enable them to market their produce effectively.

It also emerged from the interviews with women at the Mparutsa Market that the need for money to send their children to school had compelled many of the women to change focus from growing traditional crop varieties towards growing varieties that were in demand in the commercial market. An example was the loss of interest in cultivating a species of banana locally known as “*nzarayaperd*” (eliminator of hunger). The women said while the species was highly nutritious, it fetched relatively low prices due to the small fruit size and the low esteem with which people generally held the banana. In fact, the name held the connotation that it was the type of fruit that people generally ate in times of hunger, when there was not much else to eat. The observed switch towards commercially viable crops at the expense of staple food crops could indicate the possibility that the requirement for small-scale producers to pay the market rate for water might further undermine food security within communities.

There seemed to be a need therefore for the representatives of women stakeholders the Pungwe SCC to express and address the problems facing women water users in particular, as these stakeholders played prominent roles in the productive and reproductive uses of water. The adopted gender approach had to go beyond the issue of gender inclusion, and to enhance institutional capacities and mechanisms of ensuring gender empowerment and gender mainstreaming.

3.2.2.2 Gender Participation in Capacity Building

The structure of capacity building for the CCs and SCCs envisaged by IWRM policy makers included the development of technical, administrative, governance, consensus-building and conflict-resolution skills and public awareness of the new water policy and legislation (Schönbauer, forthcoming). Within the Save CC and the Pungwe SCC, however, the aspects of skills development had yet to be implemented. At the time of the study, capacity building had largely focused on public awareness.

A total of 62 public awareness meetings had been held in the Save Catchment Area in the eleven months between 09 August 2000 and 01 June 2001. Figure 1.4 and Table 1.1 show the nature of gender representation in the public awareness meetings held in the seven Sub-Catchment Areas. The data used includes gender-disaggregated data that became available as from 27 September 2000. Male attendance invariably dominated all the meetings held.

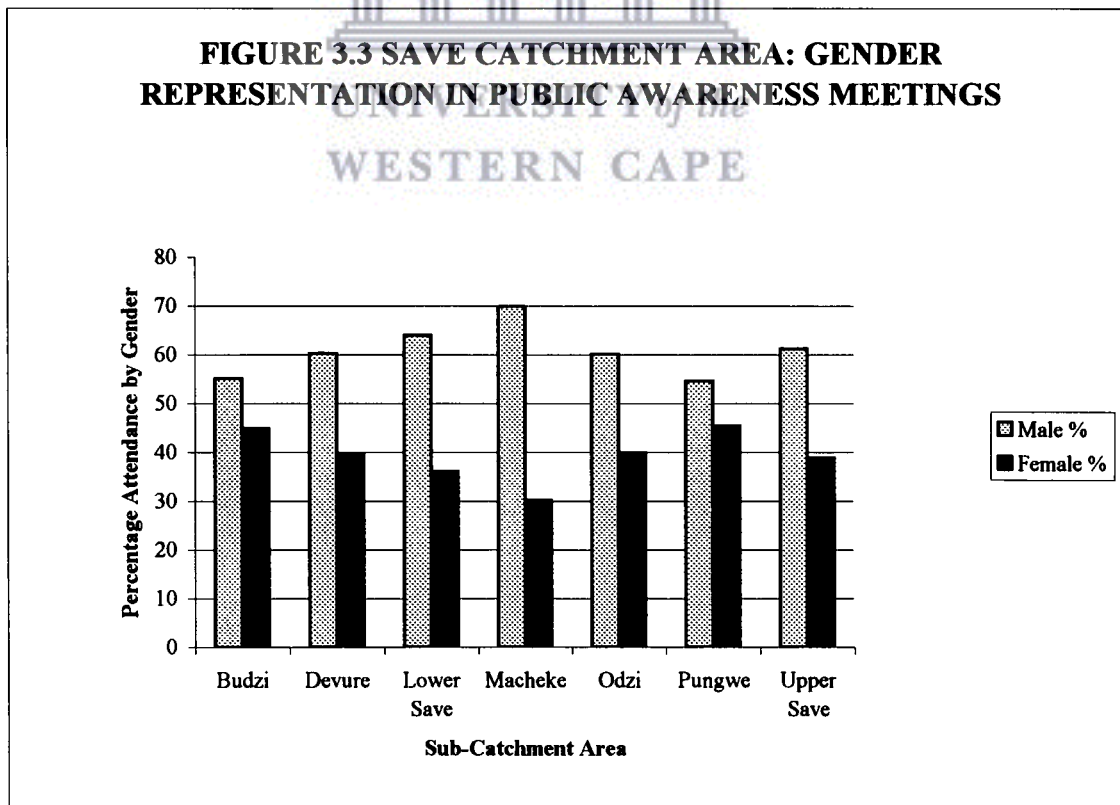
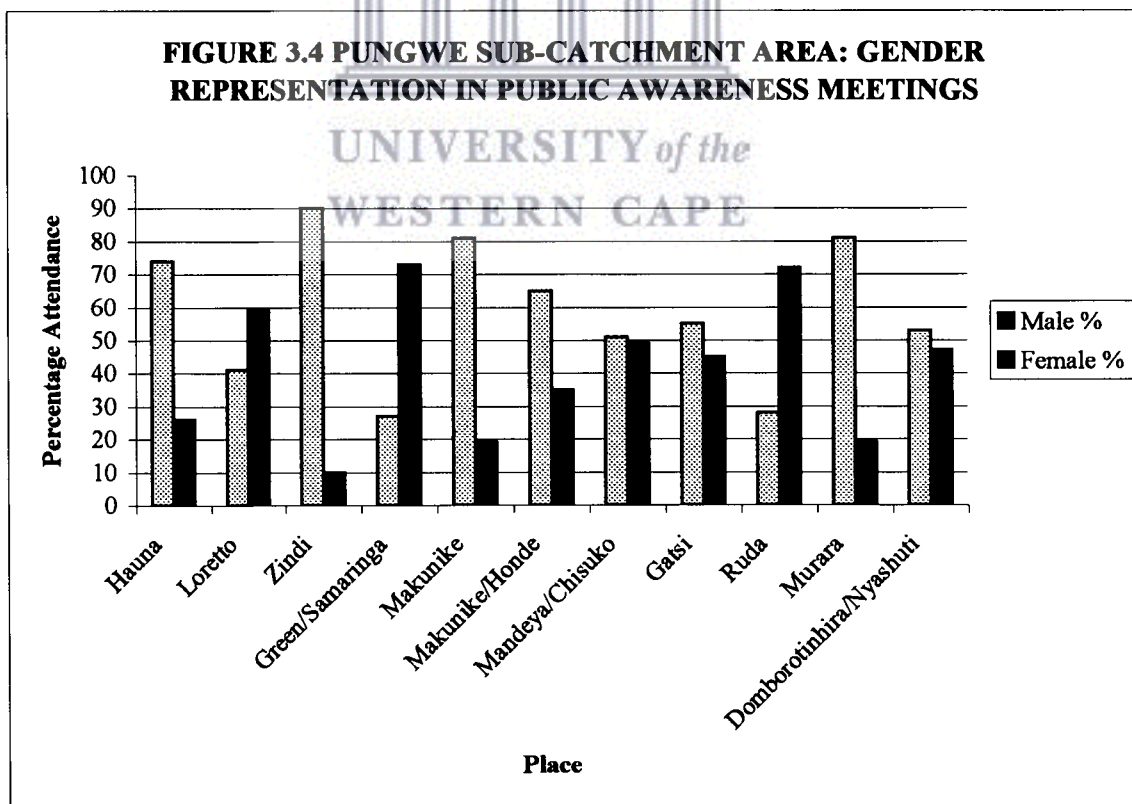


Table 3.1 Save Catchment Area: Gender Representation in Public Awareness Meetings

	Male		Female		Total n
	n	%	n	%	
Budzi	381	55.1	311	44.9	692
Devure	235	60.3	155	39.7	390
Lower Save	216	63.9	122	36.1	338
Macheke	386	69.9	166	30.1	552
Odzi	261	60.1	173	39.9	434
Pungwe	650	54.6	541	45.4	1191
Upper Save	115	61.2	73	38.8	188
	2244	59	1541	41	3785

Of the eleven Public Awareness meetings held within the Pungwe Sub-Catchment Area, eight had greater male than female representation (Figure 1.5). Women constituted 45% of the attendants, compared to 41% in the Save Catchment Area.



Due to logistical problems, the study was not able to assess the relative degrees of participation of women and men in these meetings. An examination of the reports of the meetings showed no mention of gender issues that might have arisen in the meetings. However, the interview with the Training Officer who conducted the meetings revealed that women tended to be quiet during the meetings, and were indeed reluctant to assert themselves. Interestingly, the Training Officer (male) seemed to take for granted that the reasons for women's reluctance were obvious, which probably pointed to the fact that there remained among practitioners of IWRM an acceptance of the traditional social construct that favoured men over women in vocal expression in meetings.

Gender representation in meetings generally tended to vary from place to place. Follow-up enquiries concerning this observation showed that the variations were related to differences in gender roles and time use in the various locations and under varying circumstances within the area. In some areas, particularly where the resident male population was relatively high, many men felt that they had to retain their traditional leadership role even in new initiatives such as the public awareness meetings. In other areas the demands on women's time by reproductive work compelled women to avoid attending the meetings, thus leaving mostly the men available to attend. In yet other areas, the lack of employment opportunities compelled men to migrate elsewhere to seek better opportunities, leaving women the responsibility to attend the meetings.

The foregoing observations seem to indicate that the Save CC and the Pungwe SCC have yet to achieve more equitable stakeholder representation in general and gender representation in particular. Stakeholder and gender representations constitute only two of a number of challenges that the CC and SCC were found to be facing. The next chapter presents an analysis of the observed challenges to IWRM policy implementation by the Save CC and the Pungwe SCC.

CHAPTER FOUR

CHALLENGES TO POLICY IMPLEMENTATION

The major findings of the study were that, while there persisted some problems associated with the traditional water management approach, there had also emerged new challenges to IWRM policy implementation by the river basin institutions. Some of the challenges facing the Save CC and the Pungwe SCC seemed to be rooted in the period before their formation, during the pilot phase of policy design and implementation.

4.1 ACCELERATED PROCESS OF CATCHMENT AND SUB-CATCHMENT COUNCIL FORMATION

Studies by Latham (2001), GTZ (2000) and Sithole (2000) indicate that there was a lack of effective stakeholder participation in policy formulation in the pilot phase. Policy discourses effectively remained top-down (Sithole, 2000), and the stakeholder identification process did not involve public participation (Latham, 2001). The insights derived from the Mazoe and the Manyame Catchment pilot projects were to be extrapolated to the remaining five catchment areas in the country (Zimbabwe, 1995). Donor agencies were reported to have been particularly keen for the Save CC and its constituent SCCs to adopt the pilot Catchment Council models, as a way of saving costs.

Stakeholders within the Save Catchment Area appear to have been critical of the approach used in the formation of the pilot CCs. However, certain developments at the national political and macro-economic levels that coincided with the inception of the councils seem to have compelled them to adopt an even less participatory approach. In particular, the initiation of the government's "fast track" land redistribution programme seems to have exerted ripple effects on the water sector and put political pressure on stakeholders to fast track the water redistribution process. At the same time, the

insistence by the IMF on the government to cut spending on public service also seems to have accelerated the process of devolution of authority to the river basin institutions.

The result of reducing the scheduled six month inception period for the CC and SCCs to a mere six week was that the process of council formation was top-down. The fast tracking of the formation of river basin institutions seems to have created a number of difficulties, most of which related to the transaction costs of the reforms. Notwithstanding the acceleration of the devolution process, these transaction costs were also directly related to the persistence of the sectoral approach in water resources management in Zimbabwe.

4.2 CHALLENGES OF OVERCOMING THE TRANSACTION COSTS OF THE WATER SECTOR REFORMS

The transaction costs included coordination and communication, both within the water governance hierarchy and in terms of related sectors, as well as enforcement of the new water laws. The acceleration of the devolution process resulted in the river basin institutions assuming responsibilities before they had the necessary capacity to implement ICM. The Save CC and the SCCs had yet to acquire office premises, communication links and personnel for monitoring and enforcement. These setbacks seemed to have been effectively addressed through funding from SIDA as well as the ingenuity of the councillors. The more difficult challenge, however, related to the coordination of ICM planning.

The study found that there had been lack of effective coordination and consultation in the drafting of the Preliminary Catchment Outline Plan. The problem seems to have emanated mainly from the fast tracking of the inception of the Save CC and its constituent SCCs. The Plan that was drafted retained the traditional water management focus on surface water supply, to the exclusion of groundwater sources particularly for primary use in the rural areas. In particular, this focus did not take into account that

surface water scarcity severely affects three of the seven Sub-Catchments in the Save Catchment Area, and that rural people in these areas rely mostly on boreholes and wells. The focus on surface water also failed to address the view by the new water policy that all water, whether it occurs as surface water, groundwater or other forms, constitutes part of the same watercourse system, and should be managed as such. The Catchment Planning process that was used therefore went against the ethos of IWRM.

The Department of Natural Resources (DNR), which is the sector mainly responsible for catchment protection in terms of the Natural Resources Act of 1996, viewed the lack of effective coordination and consultation as having resulted in the drafting of a Catchment Outline Plan that was based on inadequate knowledge of the environmental conditions within the Save Catchment Area. There was possibility therefore that some of the envisaged water development projects might have profound negative impacts on the security of downstream communities and ecosystems during periods of drought.

Local government sector officials considered that the lack of effective coordination and consultation in the catchment planning process had resulted in discrepancies between the needs perceived by councillors in the CC and SCCs and the actual needs perceived by local people. It is perhaps worth noting that in terms of the government's decentralization policy, the local government ministry, through local authorities, has the responsibility for coordinating local level service provision by the various sectors. This role includes the coordination of services related to primary water supply and sanitation. In terms of the new water policy, CCs and SCCs are vested with the responsibility for coordinating water resources use, development and management at the catchment level, which transcends the local authority administrative boundaries. The reported lack of coordination of functions between the river basin institutions and the local authorities might therefore have potentially critical implications on social security issues such as basic water requirements, livelihoods, health and sanitation.

The lack of effective coordination was ascribed by some local government officials to the lack of a synergy between the new Water Act and related Acts administered by other

sector agencies. Hence, although the legal instruments were not necessarily in conflict, the local level articulation of policies by the SCCs and local authorities tended to dovetail. A closer examination of the mandates of the various water related sectors seemed to indicate that the problem lay also with the institutional actors' failure to develop new protocols of organizational behaviour in line with the recent shifts in the water sector.

Indeed, sentiments were expressed that there seemed to be some resistance by some established local authority actors to the new river basin institutions, who were felt to be usurping the political action space. In some cases, Rural District Council (RDC) personnel were said to have refused to participate in the sub-catchment planning process. Save CC records also showed that a key stakeholder local authority, the Mutare City Council, had failed to attend more than ninety percent of the meetings held up to the time of the research.

The lack of effective coordination was also due to overlaps in the relative alignment of administrative and catchment boundaries. The Save CC and the SCCs viewed some of the overlaps as inconvenient to ICM, and considered that certain portions of some SCCs be managed by adjacent CCs since the places were more accessible from those Catchment Areas. In the case of the Pungwe SCC, although the source of the Pungwe River was located in the southernmost portion of the Nyanga Rural District Council (Figure 3.4), the local authority did not participate in decision-making by the SCC. This was mainly due to poor accessibility, and the fact that the said portion of the Nyanga RDC was predominantly comprised of a National Park, under the jurisdiction of the Department of National Parks, and the Large Scale Commercial Farming sector. The latter was represented in the Pungwe SCC. While the Water Act of 1998 identifies local authorities within particular catchments as stakeholders, this situation points to a need for flexibility in the ICM framework in order to balance the legal requirement for stakeholder constituency representation with what is practically feasible at the operational level.

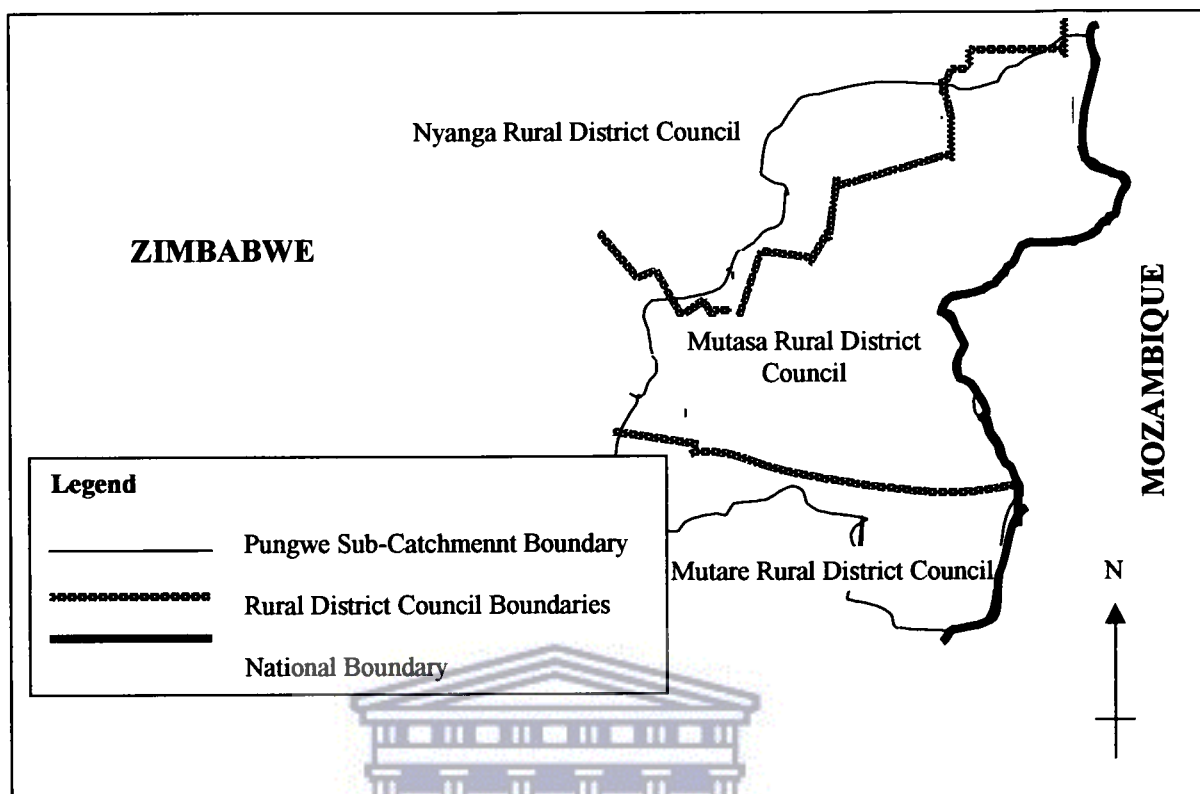


FIGURE 4.1 RELATIVE ALIGNMENT OF BOUNDARIES OF THE PUNGWE SUB-CATCHMENT AREA AND CONSTITUENT RURAL DISTRICT COUNCILS

There were overlaps of functions in the institutional arrangement between ZINWA and the Save CC. The provision for the Catchment Manager to perform water allocation duties on behalf of the CC during intervals between CC meetings was made in order to facilitate expedience in the issuing of permits. However, the arrangement was likely to cause problems of coordination. Since the Catchment Manager was accountable to ZINWA, it seemed possible that some decisions might reflect the interests of the water parastatal rather than the stakeholders. Some respondents attributed the absence of conflict, in the case of the Save CC and the Save Catchment Manager, to the compatibility of personalities between the Chairman of the CC and the Catchment Manager. It would seem as if although there has been a degree of devolution of authority to lower level institutions, there remains a desire by the state to retain a measure of control of local decision-making processes.

The problem of coordination might be ascribed, to a significant extent, to the power relations between institutional actors in the various sectors. Competition for control over the political action space was prominent between the new river basin institutions and the established local authorities. The latter have been responsible for coordinating development activities by the various sectors in the local administrative areas since the government's decentralization process started in 1984. By contrast, the river basin institutions have yet to strengthen their capacity to carry out ICM responsibilities and thereby instill confidence among various interest groups. Since the ability of an institution to perform duties vested upon it contributes to the acceptability of institutional content, procedures and processes, the problem of coordination by the Save CC and the SCCs would therefore appear to be linked also to the issue of institutional legitimacy.

4.3 CHALLENGES OF STRENGTHENING INSTITUTIONAL LEGITIMACY

There seemed to be plausible link between the problem of legitimacy of the river basin institutions and the top-down process of council formation and accession into office by SCC councillors within the Save catchment area by nomination rather than election. However, legitimacy does not only derive from a democratic process of accession into office by stakeholder representatives. Rather, legitimacy in water resources governance derives more strongly from the extent to which the stakeholder representatives are seen to balance the pursuit of the interests of their local constituencies on the one hand with those of the broader watercourse, national, regional and global resource communities on the other.

Sentiment was expressed that most councillors in the SCCs pursued self-interest or the interests of their constituencies at the expense of the interests of the broader local community. While interviews with the councillors could not fully verify this, primary

observation showed that representation in the Save CC and the Pungwe SCC was heavily skewed towards representation by male members of the commercial farming sector. This seemed to have resulted in the preoccupation by the institutions with issues relating to the commercial use of water, particularly for irrigation purposes. Not much attention was given to issues of primary, industrial and recreational water use. Such omission raised questions on the commitment of the institutional actors to address the interests of stakeholders other than those of the majority constituencies represented.

The dominance of commercial farming interests seemed directly linked to stakeholder power relations and the requirement that the institutions should finance their operations through levies collected from commercial users. The focus on commercial water use resulted in institutional failure to address some of the major water problems within the Save Catchment Area. These included water pollution by some of Mutare's manufacturing and processing industries, and the primary water needs in many of the drier rural areas. With regard to the Pungwe water, the institutions seemed more concerned with the failure by Mutare City Council to attend the Save CC meetings than with the unaccounted for water loss of approximately 50% of the water obtained through the Pungwe Mutare Water Supply Project. It seemed as if water pollution and inefficiency in water use were less important than the levies that the institutions generated from Mutare's use of the Pungwe water.

In view of the fact that downstream Beira City in Mozambique relies on the Pungwe River flow to prevent the salt-water intrusions that cause water shortages in the dry season, the failure by the Save CC to address the wastage of Pungwe water by Mutare City Council is a significant omission of responsibility. The same can be said of the Save CC with regard to the failure to sanction the City of Mutare over the discharge of industrial pollutants into an urban stream that flows through a low income housing area in Mutare to rural farming areas.

Notwithstanding the observed shortcomings of the Save CC in demonstrating commitment to serve the interests of the broader resource community, the Pungwe SCC

by contrast was found to have made a conscious effort to address more broadly the various interests ranging from the local to the international level. Such robustness was evident in the attempt by the SCC to enhance gender representation and in the expressed objective for the SCC to be directly involved in the interstate discourses concerning the use, development and management of the Pungwe watercourse. There was still need, however, for the Pungwe SCC to give the issues of representation and legitimacy a more rigorous treatment.

Towards strengthening institutional legitimacy, primary observation seemed to suggest that the discrepancies in the management styles of the Save CC and the Pungwe SCC owed more to personalities and stakeholder power relations than to any fundamental differences in organizational culture.

4.4 DYNAMICS OF POWER RELATIONS IN STAKEHOLDER PARTICIPATION

The issue of power pervaded the relations among stakeholders and between the river basin institutions and other sector agencies, such as local authorities and other government departments, and non-governmental organizations. Among stakeholders, power-distributing cleavages included gender, interest in water resources, political and economic clout, knowledge of the language of discourse, and personality.

Despite that women have been identified as playing a central and multi-faceted role in the provision, use and safeguarding of water (UNESCO, 2000; Zimbabwe, 1995) their involvement in water-related decision-making structures was very low. The Save CC was wholly composed of men. Within the entire Save Catchment Area, women councillors constituted 3.5% of the total number of SCC councillors. Of the seven SCCs, the Pungwe SCC had made the greatest effort to actively involve women in decision making and planning, with women occupying 20% of the SCC seats out of the council's gender representation target of 60%.

In addressing the issue of gender representation, the Pungwe SCC could be seen as having been robust enough to adopt a gender-responsive approach, against the prevailing tide of social attitudes that militate against women's involvement in strategic decision-making. However, the inclusion of women in the SCC was largely due to the women's action in staking out a claim in the decision-making process (Text Box 4.1), which appears to have been supported by the donor agency.

Text Box 4.1 Gatsi Irrigation Scheme: Women's Claim for a Stake in Decision Making

Apparently, the women members of the Gatsi Irrigation Scheme, near the Mtarazi Falls, had staged a strong protest against the Save CC and the Pungwe SCC during a visit by representatives of the donor agency. Many of the women were single heads of households who eked out livelihoods from micro-scale food production for marketing and household use. When the Save CC decided to allow 1500 litres per household per day for primary purposes, the excess use being levied at commercial rates, the women had expressed concern that they could not afford to pay the new water prices. Subsequently, they felt that their grievances concerning the water permit application fee and the water levies had not been given due consideration by the Pungwe SCC. The leader of this women's group then was a man, who refused to be involved in decision-making by SCC. To resolve this and similar conflicts, the SCC availed two seats to representatives of women micro-scale and small-scale farmers as a stakeholder group. These seats gave women the 20% measure of inclusion in the SCC.

Such inclusion of women in decision-making structures, however, does not automatically ensure that women's interests are voiced, as there exist power relations between men and women that result in unequal gender voices. Primary observation of the decision-making process by the Pungwe SCC pointed to a need for the adopted gender approach to go beyond the issue of gender inclusion, and to enhance institutional capacities and mechanisms of ensuring gender empowerment and gender mainstreaming.

The competition between interests in water among the various stakeholders was manifest in the emergence of alliances among stakeholders belonging to the same sector. The small-scale and the large-scale commercial farmers seemed to have combined to form a dominant force in both the Save CC and the Pungwe SCC. This

enabled them to direct the focus of the river basin institutions towards issues of irrigation.

The elected and traditional local authority representatives also voiced the primary water interests of their constituencies. However, because perhaps these representatives were a minority or because their constituencies did not contribute much to generating the levies required for CC and SCC operations, their clout in the decision-making processes was visibly the lesser. It seemed possible that had the Mutare City Council actively participated in the Save CC meetings, the local authority might have tipped the balance of power in favour of local government authorities. The City Council commands a significant share of the CC revenues raised through levies. Nevertheless, the non-cooperation by the Mutare City Council still seemed to have had a marked impact on the Save CC, whose councillors felt that City Council was undermining their authority and efforts in articulating the new water policy.

The power play between the Mutare City Council and the Save CC had also effectively denied the Mutare constituency the opportunity to voice their concerns with regard to water problems that affect them, such as water pollution, supply and sanitation. Furthermore, the City Council appeared to have shunted the responsibility of representing the residents of Mutare in the Save CC to water engineers employed by the council. Ironically, accountability to the Mutare constituency is presumably greater for the elected councillors than it is for the employees of the City Council.

The power dynamics between the Save CC and the local government sector also seemed to hinge on the issue of political clout. Whereas the latter had either established their authority over the years or through the ballot and networks, the former were only recently nominated. Consequently, the competition for political action space outside CC and SCC meetings tended to be dominated by the local authorities. While the roles of the river basin institutions and the local authorities were indeed complementary, the power relations between the two undermined the integration of water management activities at the local level.

Consequently, water resources management activities at the rural local level were divided into two distinct domains. Groundwater and primary water supply was the domain of the RDCs, who were mandated to coordinate the implementation of the government's Integrated Rural Water Supply and Sanitation Programme (IRWSSP). Despite that the new water policy mandates the CCs and SCCs with the integrated management of all components of a watercourse system, these institutions had so far avoided concern with groundwater and focused almost exclusively on surface water sources and commercial use of water. Atmospheric water, particularly as it related to the efficiency of water use in rain-fed and irrigated crop production, was also ignored. By reinforcing the traditional distinction between the various components of the watercourse system, the power politics between the river basin institutions and the RDCs contradicted the philosophy of IWRM.

The lack of an integrated approach in the management of the various components of the watercourse system seems to have been inherited from the pilot phase structure of organizational sector functions (Figure 4.2). The organizational functions were allocated according to the sources of water traditionally used or managed by the main sectors. Hence, while there was coordination by the Steering Group at the higher levels, there was no integration of functions at the lower levels of the hierarchy.

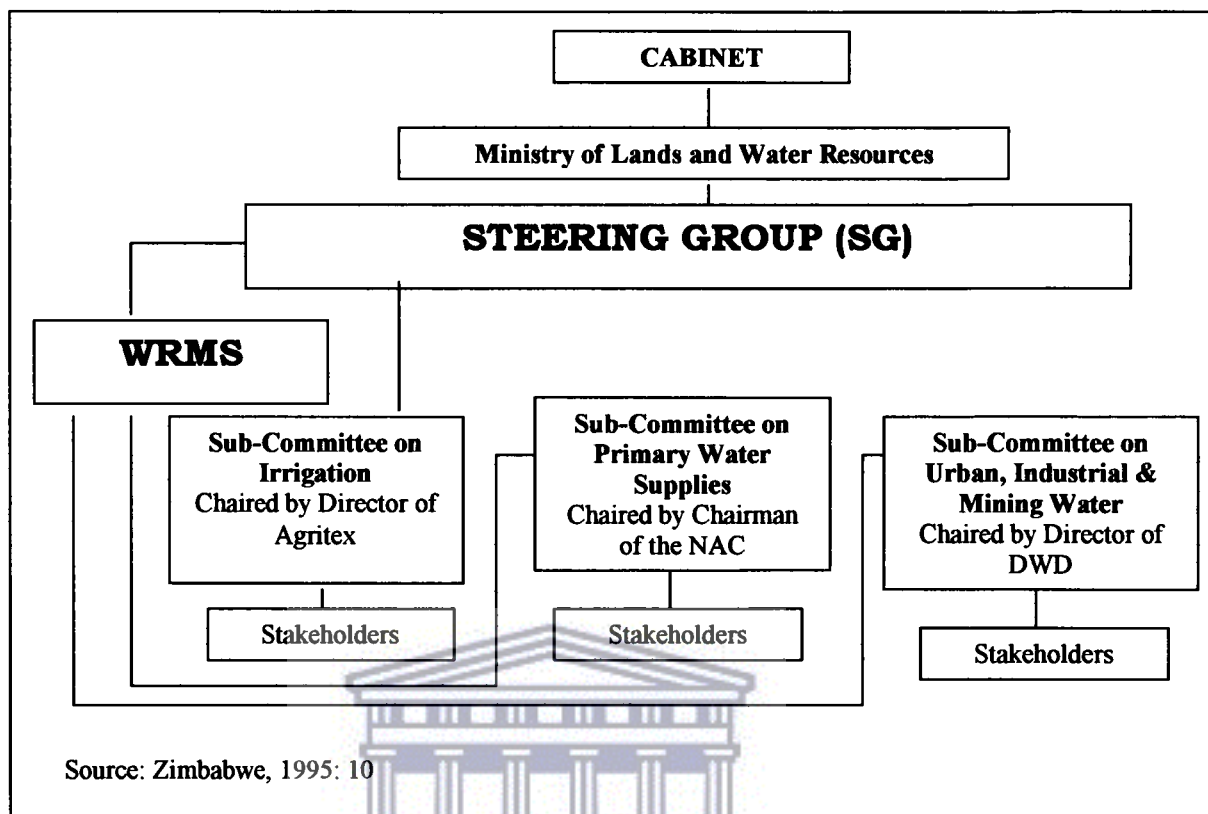


FIGURE 4.2 ZIMBABWE WATER RESOURCES MANAGEMENT STRATEGY: ORGANIZATIONAL CHART

Language constituted a source of power among stakeholders. Despite that many of the stakeholder representatives spoke Shona as their first language and that most of the other representatives were conversant in Shona, the language used in CC and SCC deliberations was English. In the observed Save CC meeting, this seemed to contribute to the difficulty of expression for some participants. By contrast, although English was also used in the Pungwe SCC, where 90% of the councillors were first language Shona speakers, the debates at the observed meetings were very lively, and councillors showed a remarkable command of the language and confidence in expressing their needs. Indeed, one of the vocal members of the Pungwe SCC had been reticent at the previous Save CC meeting.

A follow up to this observation revealed that the reticence by some councillors in the Save CC was due to the dominance of certain personalities, who made it difficult for most other councillors to participate actively in the meetings. This seemed to point to the need for the Save CC to enhance its capacities and mechanisms in using participatory approaches, so that the representation of stakeholder interests could be more effective.

4.5 CHALLENGES OF RESOLVING STAKEHOLDER CONFLICTS

Apart from the case of the women members of the Gatsi Irrigation Scheme (Text Box 4.1), many of the conflicts that the river basin institutions dealt with concerned the issue of compliance in the sharing of water for commercial use. The conflicts arising from differences of interest and perception between the commercial and primary users seemed to be lower on the scale of the councils' priorities. The councillors conceded that this was because at the time of the research, there was an abundance of water within the Pungwe River Basin and there was therefore less competition for water. Water-related conflicts between commercial and primary users often increased during times of water scarcity, such as during the 1991-1992 drought.

The Save CC and the Pungwe SCC had contrasting mechanisms for resolving stakeholder conflicts. This was due to the differences in the hierarchical positioning of the two institutions, and therefore differences in their scale of operations.

In the case of the Pungwe SCC, the general approach that had been found most effective was using the established customary regulatory framework to sanction against non-compliance, while avoiding confrontation. This involved subtly using social influence and moral obligation, as encoded in the non-formal customary law, to elicit compliance. Consequently water users who regularly exceeded their water allocations were compelled to comply or else face ostracism from the broader community and penalties

from the community's customary court. The choice almost invariably made was that of compliance. It is worth noting that the effectiveness of the Pungwe SCC's conflict resolution mechanism rested strongly on the fact that there was a remarkably high degree of common cultural background among stakeholders, and that the stakeholders within the Sub-Catchment boundary comprised a relatively small, close-knit group.

The Save CC, by contrast, had to deal with conflicts at a much broader and more diverse spatial, cultural and sector scale. Consequently, the CC had to use the "user pays" and "polluter pays" principles, as well as impose other penalties encoded in the formal water legislation. The CC had on a number of occasions penalized non-compliant users by cutting off their water supplies. Ultimately, the CC could revoke the water permit of a non-compliant user. Although the expectation of such penalties tended to enhance compliance, the reduction of non-compliance had not yet reached the desired levels. This was due to the CC's limited monitoring capacity. Towards solving this setback, the Save CC showed a degree of robustness in that it had initiated an awareness campaign to foster the ethic of self-monitoring. The CC had also started the process of recruiting meter readers who would monitor water use on its behalf. Apart from these measures, the Save CC had in principle adopted the fractional water allocation system to facilitate the fair, prioritized and proportional use of water during times of water scarcity, when water conflicts tended to escalate.

4.6 CHALLENGES OF STRENGTHENING ECOSYSTEM SUSTAINABILITY

The Preliminary Catchment Outline Plan for the Save Catchment Area had been drawn without sufficient knowledge of the environmental conditions within the catchment. The subsequent attendance of Save CC meetings by environmental and agricultural extension officers seemed to indicate that there was potential for this problem to be resolved. However, while environmental conservation measures do contribute to ecosystem sustainability, the main difficulty in pursuing this objective was that there

was no exact scientific knowledge with which to determine the critical levels of water flow required to maintain the environmental reserves. There was ongoing research on this issue at two sites within the Save Catchment Area, including the Pungwe-Mutare Project's in-take point. In addition to this, ZINWA's technical support unit had almost completed the database on the co-efficients of variation in river flows. This information was essential in providing a sound basis for decisions on water allocations for stakeholder use as well as for the environmental reserve.

4.7 CHALLENGES OF THE “FAST TRACK” LAND RESETTLEMENT PROGRAMME

The government's “fast track” land resettlement programme appeared to have become a key challenge to the implementation of IWRM. Many respondents expressed concern that the programme had resulted in the reduction of donor funding for many envisaged water-related projects. In addition to this the prioritization of the programme, in terms of local level expenditure, had interfered with the coordination of planned and budgeted social services between various sectors involved in primary water supply. The redirection of development activities and funding to the newly resettled people had also created gaps in the provision of primary water to identified established communities, thus perpetuating their insecurity.

Respondents were also keenly concerned about the plight of displaced farm workers, who seemed to have been marginalized by the fast track resettlement programme. At the time of the research, it was reported that about 34 000 farm workers would be displaced by the programme and 15 000 families resettled on the farms within the Save Catchment Area. Both the displaced workers and the resettled people would require coordinated inputs of services by the river basin institutions and other sectors, at a time when donor funding was becoming scarce.

The emergence of the newly resettled groups of people on the commercial farms demanded that the Save CC and the SCCs address the issue of representation of this stakeholder group in decision making and planning. There had also emerged a need for the Save CC and the SCCs to address the new requirements for access to water by the resettled people. However, no special concession had been made by these institutions to facilitate the representation of fast track resettlement farmers.

Although no clear-cut reason was given for this, it seemed as if the main reason was that the resettled people were viewed as being militant against any suggestion that they should pay the water permit application fees and water levies for commercial use. There seemed, however, to be no anticipation of difficulties in engaging the resettled groups of people about principles like equity in access to water, efficiency in water use and the sustainability of the ecosystem. The problem therefore was in trying to reconcile principles such as stakeholder participation and “the user pays” with the demands by the resettled people for free access to water and land.

In some cases, the resettled people co-existed with the established commercial farmers, who already had permits for the water on the farms. It was not easy for the councillors to arbitrate conflicts emanating from shared use of water whereby one party paid for the water while the rest free-rode. On the other hand, there was the technical difficulty that in the event that all parties agreed to pay the permit application fees, how would the councils resolve the problem of issuing additional permits for the same allocation of water. Some representatives from the large-scale commercial farming sector expressed concern that while they were compelled by the law to continue paying levies for their water allocations, they were no longer able to use that water due to disruptions in production.

The “fast track” land resettlement programme indeed seemed to have introduced new dynamics in the power politics relating to the role of CCs and SCCs in IWRM. Whereas the tensions prior to this programme had revolved around the river basin institutions and the local authorities, the emerging political dynamics had since shifted to revolve

around alliances of small-scale, large-scale and communal area farming sector representatives in the Save CC and Pungwe SCC on the one hand, and local government officials and resettled groups on the other. It seemed that the farming sector representatives in the river basin institutions were making a conscious though strained effort, in the spirit of conflict-avoidance, to be conciliatory in addressing the needs of the resettled groups.



CHAPTER FIVE

DISCUSSION AND CONCLUSION

The findings of the study show that overcoming the challenges of enhancing institutional coordination, legitimacy, stakeholder participation, conflict resolution, ecosystem sustainability and responses to “fast track” devolution and resource redistribution processes has not been easy for the Save CC and the Pungwe SCC. A crucial question that remains to be answered is: What potential do the river basin institutions have towards achieving the envisaged outcomes of IWRM? This chapter presents a discussion on the institutional capacities of the Save Catchment Council and the Pungwe Sub-Catchment Council. The discussion will also examine the impact of stakeholder power politics on the effectiveness of the water governance institutions, and the extent to which the institutions have been gender responsive.

5.1 ASSESSMENT OF INSTITUTIONAL CAPACITIES, STAKEHOLDER POWER RELATIONS AND GENDER ISSUES

According to Mostert (1999) IWRM is essentially about treating the interrelated aspects of water as such, in order to prevent ineffective or sub-optimal sectoral solutions, the catchment level institutions should have the necessary capacity to adopt a complex integrated approach towards planning and implementation. Coordination, information gathering and dissemination, and monitoring and enforcement are some of the capabilities required. Others include the resources to carry out operations, such as finance, knowledge and technology.

In terms of Zimbabwe’s new water policy, Catchment and Sub-Catchment Councils are the local level IWRM institutions vested with the authority to govern the appropriation,

provision and protection of water within defined Catchment Areas. The capacity of these institutions to fulfill these functions is a critical factor in the success and sustainability of the policy goals. The analysis of the ways in which the Save CC and the Pungwe SCC have dealt with the challenges of implementing IWRM reveals that the institutions have both strengths and weaknesses.

5.1.1 INSTITUTIONAL STRENGTHS AND WEAKNESSES

To a large extent, the institutions seemed to conform to the design criteria proposed by scholars like Ostrom (1990) and Dovers & Dore (1999 cited in Dovers, 2001). Perhaps an important source of strength for the Save CC and the Pungwe SCC was the legislative support accorded to the institutions by the Water Act of 1998. The purposes of the institutions were clearly stated in the Water Act, and seemed to be comprehended by all the councilors interviewed. The Water Act specified the recognized stakeholder categories, and the physical boundaries of the CPR were clearly defined by the Pungwe watershed.

The appropriation rules seemed to have been communicated to water users in the farming sector through awareness meetings and other capacity building activities. In the Pungwe SCC, such capacity building tended to target the poorly represented groups, particularly women. The percentage attendance of awareness meetings by women was 45%. Perhaps the one weakness of the observed activities was that while capacity building requires sufficient project time for consensus to emerge, the Save CC had had to embark on an accelerated capacity building exercise in order to catch up with the accelerated inception period for the CC and SCCs. The fact that this exercise had had to be undertaken without an adequate complement of training officers also raised questions as to the effectiveness of the exercise. The Save CC had since initiated the recruitment of seven more training officers who were to be based in each of the SCCs.

The Save CC and the Pungwe SCC demonstrated commitment towards the monitoring and enforcement of the appropriation rules. Towards this end, the relatively small size of the Pungwe Sub-Catchment Area and the greater degree of cohesion and common background of stakeholders were sources of strength for the Pungwe SCC. It seemed that stakeholder conflicts over water use were easier to resolve at the Sub-Catchment level than at the Catchment level. Nonetheless, the Save CC had been able to elicit agreement among the relatively more heterogeneous stakeholders, through its various constituent SCCs, that in the event of water scarcity due to drought, for example, the water users would reduce their levels of appropriation. This preemptive move was likely to reduce the possibility of conflicts over sharing water.

There was also evidence that the appropriators represented in the CC and SCC had a degree of freedom to modify the operational rules and to devise their own structures without challenge from the central government or ZINWA. The Pungwe SCC, for example, had decided to retain 10% of the 40% levy charged to water users by ZINWA. The retained amount was intended to cover the costs incurred by the SCC in performing certain functions on behalf of ZINWA. Notwithstanding these strong points, however, the Save CC and the Pungwe SCC showed certain weaknesses.

The clarity of the purposes and boundaries of the CPR did not necessarily translate into relative ease of policy implementation. Rather, there were discrepancies between policy prescriptions and operational activities. For example, recognized stakeholders such as the Mutare City Council were either excluded from or disinterested in participating in the activities of the Save CC and the Pungwe SCC. Other possible stakeholders, including the tourism and the energy (hydroelectricity) private sectors, were not included in the list of legally recognized stakeholders, although they were some of the key stakeholders within the Sub-Catchment Area.

The physical boundaries of the Pungwe Sub-Catchment Area presented difficulties of access, and the CC and SCC had decided that adjacent catchment councils would manage the less accessible areas, provided that access from these was easier. While this

strategy made management operations easier for the SCC and CC, it was also reminiscent of the traditional approach in which water management was according to administrative boundaries.

Another difficulty arose from the lack of clarity on the accountability of the Catchment manager. While the Catchment Manager was empowered to carry out certain key functions, including decision-making, on behalf of the Save CC, he remained accountable to ZINWA. Although it might be argued that representatives from various CCs, including the Save CC, constitute ZINWA the fact remains that the accountability of the Catchment Manager to ZINWA detracts from the autonomy of the Save CC.

Other problems related to the lack of resources to carry out functions. For example, although the popular opinion was that the Pungwe Sub-Catchment had sufficient water resources and demand to generate the required revenue to sustain the activities of the SCC, there was a shortage of resources such as knowledge on the environmental water demand and on how to use monitoring devices. Although the Pungwe Sub-Catchment was viewed as having sufficient financial resources, the same could not be said of the drier SCCs within the Save Catchment Area. These differences could negatively impact on the efforts by the Save CC to coordinate activities, as not all SCC would be able to afford similar levels of expenditure.

The continued focus on surface water supply, as indicated by the preliminary catchment outline plan, constituted another source of weakness for the Save CC and the Pungwe SCC. By focusing on surface water supplies and their potential to generate revenue and promote agriculture, wetter SCCs such as the Pungwe tended to overlook the value of managing groundwater and atmospheric water sources. The drier SCCs were considered as having inadequate resources to sustain SCC activities, despite that this view did not seem to be based on any factual knowledge about the state of groundwater sources in such SCCs.

The Save CC and the Pungwe SCC showed differences in capacity to promote equity in stakeholder participation. While observations of the Pungwe SCC meetings revealed that expression of the views of the various stakeholders were encouraged, observations of the Save CC meetings showed that stakeholder participation was largely dependent upon the forcefulness of a councilor's personality. Consequently, Save CC meetings tended to be dominated by a few vocal councilors, with possible exclusion of potential inputs by the less forceful councilors.

The Pungwe SCC had made further progress towards more equitable gender representation in decision-making than the Save CC. 20% of the councilors in the Pungwe SCC were women, while the Save CC was wholly composed of men. The female councilors within the Pungwe SCC were encouraged to voice the concerns of their constituencies. Since women play a critical role in the provision, use and safeguarding of water, the lack of women's representation in the Save CC therefore meant that the voice of a significant stakeholder group was not heard. This could undermine the effort towards achieving the some of the objectives IWRM.

Gender representation in awareness meetings in the Pungwe Sub-Catchment Area was 55% for men and 45% for women. While this was seen as a reflection of both the place-specific gender division of labour and the gendered nature of time use, the significant levels of representation of both gender groups might also be a reflection of the achievements by the Pungwe SCC and the Save CC in promoting gender equity in capacity building. The indication here is that while there have been shortfalls in achieving gender equity in decision making, the Save CC and the Pungwe SCC do have the potential to improve the representation of women in the more strategic areas of water resources management.

5.1.2 THREATS TO THE SAVE CATCHMENT COUNCIL AND THE PUNGWE SUB-CATCHMENT COUNCIL

Although the Pungwe SCC showed greater capacity to resolve stakeholder conflicts than the Save CC, the greatest threat to both institutions appeared to be the existence of certain forms of stakeholder conflicts, and the inability of the institutions to identify and deal with these conflicts. The observed competition between local authorities and the catchment management institutions for dominant roles in water management coordination seemed to undermine essential requirements of IWRM, particularly the need to integrate management according to CPR boundary as opposed to administrative boundary. The competition seemed as if it could continue to undermine the legitimacy of the CC and SCC in the event that these institutions became composed of elected representatives.

Conflicts over land and water redistribution also seemed to pose a threat to the operations of the Save CC and the Pungwe SCC. The lack of representation of resettlement area farmers within the SCC and the CC meant that there was no water-related forum for the established commercial farmers to engage with the growing resettled farmer stakeholder group and resolve differences or identify common concerns. Without the involvement of resettlement area farmers in decision-making, the effective carrying out of operations by the CC and SCC would probably remain largely restricted to places outside the gazetted and *de facto* resettlement areas.

The blanket application of the “user pays” principle was another potential threat. The majority of rural people, particularly women, in Zimbabwe earned less than the minimum wage or are unemployed (Zimbabwe, 1995). The failure by some water users to pay for water could result in perceptions that access to water has remained the prerogative of those with monetary resources, and thereby disaffection with the CC and SCC who play the monitoring and enforcement roles in IWRM.

The possible withdrawal of funding by donor agencies owing to differences over the government’s land acquisition policy constituted another threat to the sustainability of the Save CC and the Pungwe SCC. These institutions were newly emerged from the

inception period, and having to yet build up sufficient strength, they therefore required some external resource inputs, either from the government or donor agencies.

5.1.3 RECOMMENDATIONS: OPPORTUNITIES FOR THE SAVE CATCHMENT COUNCIL AND THE PUNGWE SUBCATCHMENT COUNCIL

5.1.3.1 Participation

For the Save CC to succeed in promoting effective stakeholder participation, there is a need for the institution to ensure that the views of all the represented stakeholders are heard. One way of doing this would be for the Save CC to have a procedural framework that allows all the councilors to make inputs from their various constituencies, and for these inputs to be treated with due respect and seriousness. In addressing the issue of stakeholder equity, there is also a need for the Save CC and the Pungwe SCC to consider broadening representation to include stakeholders from sectors other than agriculture. This would dispel the impression among other stakeholders that the CC and SCC are forums to advance the interests of the farming community, and therefore render the institutions more legitimate.

The inclusion of women in decision-making structures such as the Pungwe SCC does not necessarily ensure active participation by women, and there was yet a need for the Pungwe SCC to go beyond gender inclusion and more actively build the participatory capacity and confidence for all the relevant institutional actors, especially the poorly represented groups such as women. There was a particular need for the Save CC to specifically target women in decision-making roles. Without such a measure, outcomes such as equity in access to water and efficiency in water use would be difficult to achieve. For example, the requirement for all users to pay for water might have potential negative impacts on rural women's capacity to ensure household food security. The participation by women in strategic decision-making could contribute to ensuring

that preferential rates are applied to small-scale producers whose main purpose is reproductive rather than commercial.

5.1.3.2 Stakeholder Conflicts

While conflicts between local authorities and catchment management institutions might constitute a significant potential threat particularly to the Save CC, it seems plausible that such conflicts might be averted through the adoption of appropriate strategies. It is indeed essential for the local authorities and catchment management institutions to work closely together since both play key and complementary co-ordination roles. There is a need therefore to link the local authorities' roles in the coordination of service sectors within local administrative areas with the catchment management institutions' roles in the coordination of water resources management in Catchment and Sub-Catchment Areas. If the competition between local authorities and the Save CC and Pungwe SCC can be seen as a problem of divergence in the politics of appropriation and provision, it would be apparent that the existing separation of provision and appropriation functions of both authorities presents an opportunity for achieving an improved relationship.

On the one hand, the local authorities, whose roles include facilitating the provision of water in their respective administrative areas, would take the lead at coordinating water provision at the local level. For example, in the rural areas the local authorities would continue to coordinate the IRWSSP. However, the local authorities would actively involve the relevant CC and SCCs in decision-making structures. Such involvement would ensure that decisions in one administrative area are coordinated with decisions affecting the other parts of the Catchment or Sub-Catchment Area.

On the other hand, while the CC and SCCs would continue to be responsible for the overall coordination of water management within the broader Catchment and Sub-Catchment Areas, they would actively involve the local authorities in decision-making and implementation. Service sectors for the Local Government-driven IWRSSP, such as

the Ministry of Youth, Gender and Employment Creation, had established useful community structures, skills and technology that could be used in capacity building in IWRM, thus avoiding duplication.

At the time of the study, the elected and traditional leaders seemed to play a subordinate role, since farmers dominated the meetings. The observed reluctance by local authorities to attend meetings was probably a manifestation of possible dissatisfaction over this *status quo*. The active involvement of local authorities in CC and SCC meetings is important because these represent a significant proportion of consumers who use water for reproductive, industrial and other purposes within local authority areas.

There is a need for local authority involvement to go beyond the representation of local people by elected councilors or traditional leaders. Until such time that local government bureaucracy is made accountable to the electorate, the involvement of local authorities might require that senior local government officials be compelled to attend CC meetings. Without such involvement, it is difficult to see how they can give advice to local councilors or to carry out the duties relating to water provision under the IWRM framework.

At the time of the study, the Save CC did not seem to make effective use of services provided by sectors such as natural resources, agriculture, health and education. Rather, the CC tended to rely mostly on the Catchment Manager, a water engineer by profession, in spite of the complexity of the IWRM problem. The Save CC could adopt a multi-disciplinary approach to decision-making and implementation and actively involve all the related sectors at the operational level. Not only would this eliminate the costly requirement for consultants to provide services to the CC, but it would also ensure that public funds are utilized optimally.

Although the conflicts over land and water redistribution between resettlement area farmers and established farmers were a major concern within the Save CC and Pungwe SCC, it might be possible that the common ground between the farmers could provide

opportunities that would foster cooperation. During the fieldwork, resettlement farmers and commercial farmers within the Save Catchment Area were observed to have independently initiated a move towards “sustainable co-existence”, in which they sought to devise ways in which they could share land, water and other resources required for commercial agricultural production. Although the Provincial Governor delayed this move on the basis that she had not been “properly” informed, it showed that the competition between resettlement farmers and established commercial could indeed be transformed into a springboard to offset cooperation.

5.2 PROSPECTS FOR ACHIEVING THE ENVISAGED OUTCOMES: DISCUSSION AND CONCLUSION

Towards answering this question, the view put forward by this paper is that the observed institutional capacities and mechanisms do contribute to the ability of the institutions to address the envisaged outcomes, namely effective stakeholder participation in decision-making and planning, equity in access to water, efficiency in water use and management, and protection of the ecosystem. However, it is perhaps more useful to go beyond the empirical local level and examine the performance of the CCs and SCCs in terms of the national and global contexts within which they are embedded, and in terms of the ideological bases of IWRM. In particular, it is necessary to unpack some of the founding concepts of IWRM, such as good ‘governance’, ‘democracy’, ‘stakeholder participation’, and ‘security’.

With the end of the Cold War and the emergence of Sustainable Development as the new high ground, there has emerged a normative consensus among diverse, contradictory and competing development approaches and institutions on these principles and concepts. There seems to be agreement between the Mainstream and Alternative Development approaches; and between private sector actors such as the World Bank and Civic Society actors such as NGOs, over the terms. Such consensus calls for a closer questioning of the meaning and usefulness of the concepts. This

section initially defines some of the key concepts that form the basis of IWRM, and then proceeds to unpack the concepts as they have been applied to Zimbabwe in particular and Southern Africa in general.

5.2.1 DEFINING SOME KEY CONCEPTS UNDERPINNING IWRM

5.2.1.1 Security

The concept of security is linked to the reduction of uncertainty. The conventional notion of security has tended to emphasize industrial development (Golubev & Biswas, 1985) and state military power (Swatuk & Omari, 1997; Swatuk & Vale, 2000) as being prerequisites to security. Threats to security have been viewed as emanating from outside state political boundaries (Swatuk & Omari, 1997). With the end of the Cold War era and the ascendance of sustainable development as the new high ground, the concept of security has been expanded, both horizontally and vertically, beyond considerations of state power (Shaw, 1997a; Soderbaum, 1998; Marchand *et al*, 1999). The horizontal broadening of the concept has involved the creation of a wider security agenda that embraces the political, social, economic, military and environmental sectors (Buzan, 1991 cited in Booth, 1994; Marchand *et al*, 1999). The vertical expansion of the concept of security has involved conceiving threats to security at various levels of analysis, ranging from the local to the global levels (Buzan, 1991 cited in Booth, 1994). Threats to security are perceived as emanating also from within state boundaries (Shaw, 1997b; Swatuk & Vale, 2000).

The study recognizes that despite the shifts in perspectives on security, the narrow industrialist, militarist and state-centrist notions of security still prevail in some quarters. In this study, however, security refers to the broader notion of the concept, as this seems more resonant with the core principles of IWRM. However, given the multiplicity of institutional actors involved in water governance, the study also

recognizes that within the broader notion of security, there are varying perceptions and agendas. Those actors who have the control or power over water resources governance determine the agenda for security.

5.2.1.2 Governance

'Governance' is one of a number of concepts over which there has emerged an agreement among diverse, contradictory and competing development approaches and institutions. These include the Mainstream and Alternative development approaches, private sector actors such as the World Bank, and civil society actors like Non-Governmental Organizations (NGOs). This study considers MacCarney's (2000) analysis of the concept useful in that it captures both the context in which governance has emerged as well as the range of other principles and ethics that have been attached to the term.

According to McCarney (2000) the first World Bank definition provided by senior officials Landell-Mills and Serageldin in 1991 was that governance is "the exercise of political power to manage a nation's affairs". This definition was modified in 1992, and governance became defined as "the manner in which power is exercised in the management of a country's economic and social resources for development". The World Bank definition recognizes that the technical and political aspects of governance are related and intertwined. The political dimension is related to the degree of genuine commitment to the achievement of good governance and the need to arbitrate equitably among competing interests. The technical aspect relates to issues of efficiency and public management. The World Bank considers that political, legal and bureaucratic accountability is necessary for 'good governance'.

McCarney (Ibid.) links the emergence of the concept of governance to the time when structural adjustment lending and related reforms were being assessed within the World Bank. She states:

Driven by a philosophy of improving the institutional framework for development management – a more efficient use of public resources, cutting fiscal deficits, reduces government intervention and enhancing a free market operation in the process – success was to be measured on the effectiveness of government institutions residing within a space which has become known to donor as the ‘enabling environment’.

When it emerged, therefore, the concept of governance focused on state institutions, particularly government institutions. The focus has since broadened to include civil society and the private sector ranging from the local to the global levels. Within this framework, public participation is an important component in ensuring bureaucratic accountability and curbing corruption.

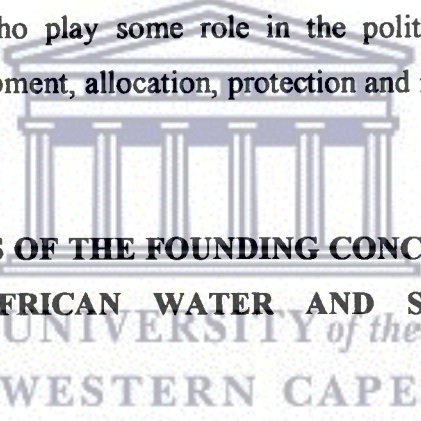
MacCarney’s (2000) analysis of the World Bank definition of governance is indeed useful in providing clarity on the context and the requisite ethics for IWRM institutions. However, there is a need perhaps to also view governance as linked to the emergence of sustainable development. There are overlaps between the World Bank and the sustainable development principles of democracy, efficiency and equity. This study uses the term governance in terms of the prevailing normative consensus between the World Bank, other development sectors and civil society. The study recognizes however that there also exist differences in perceptions, interests and power among the various institutional actors promoting governance. Such “resonance” and “dissonance” (according to MacCarney, 2000) is analysed within this study in terms of the local-global praxis.

5.2.1.3 Stakeholder Participation

The concept of participation has been defined and interpreted in various ways by various scholars including Pimbert & Pretty (1994 cited in IIED, 1994: 19), Paul (1987 cited in Little, 1994: 349), Cernea (1985), MacNair (1976) and Arnstein (1969).

Interpretations of participation have varied from passive to active participation, and some scholars have considered representation as yet another form of participation. In this study the definition found particularly useful is that by Cernea (1985) that participation is “empowering people to mobilize their own capacities, be social actors, rather than passive subjects, manage resources, make decisions, and control the activities that affect their lives”. Cernea’s definition captures the essence of the governance perspective on resources management.

The term ‘stakeholder’ has also emerged from the governance approach, and represents a shift away from the traditional state-centrist, non-participatory resource management and development approaches that viewed people as “beneficiaries”. Stakeholder refers to formal and informal institutional actors, at defined levels, who have interests in shared resources, and who play some role in the political and technical processes regarding the use, development, allocation, protection and management of resources.



5.2.2 IMPLICATIONS OF THE FOUNDING CONCEPTS OF IWRM ON THE SOUTHERN AFRICAN WATER AND SECURITY DEBATE: A DISCUSSION

An important starting point in interrogating the founding concepts of IWRM perhaps is the question: “Whose security does IWRM address?” In addressing a similar question with regard to the emerging consensus on a broader security for Southern Africa, Booth (1994) states that whoever has the power sets the agenda for security according to how they conceive the threats to security.

The emergence of the new water governance framework for Southern Africa has resulted in a dispersal of regulatory power from the traditional nation state centre towards the sub-national and supra-national levels (Figure 1). There has also been a simultaneous decentralization of power across a broader range of institutional actors within the political ecology hierarchy. Such actors include various state, private sector

and civil society actors whose operations interact and overlap both horizontally and vertically within the hierarchy.

Despite the apparent consensus among the various actors, the motives of each are under-pinned by a particular theory, paradigm or at least a set of assumptions concerning the need for intervention in the regional water sector. There are also multiple vested interests, some overt and others covert. Thus, what seems to be a common drive towards cooperation for the sake of good governance, broader security and sustainable development is also riddled with self-interest. For example, the coordination of water policies in accordance with international frameworks has resulted in national legislations, such as Zimbabwe's Water Act of 1998, which stipulate the recognized stakeholders within Catchment Areas. The reality is that under the nested water governance framework, stakeholders in Southern Africa's water resources go beyond the Catchment Area boundary. To cite, international donor agencies and other funding organizations are likely to influence decisions and implementation at the local level, and such decisions and actions may not necessarily be congruent with the embedded local contexts. Rather these decisions and actions may reflect the perceptions, values and interests of external actors.

A major problem with the new security regionalism in Southern Africa is that power relations between the multiple actors are not equitable. Foucault (n. d. cited in Parpart, n.d.) defines power as being "fluid, relational and connected to control over discourses and knowledge". This definition departs from the traditional notion of power that considers that "power is control over institutions, resources and people". In the context of IWRM therefore, the view in this study is that power relations among the various multi-level stakeholders and other institutional actors are subject to change, and whoever has control over discourses and knowledge sets the agenda for water governance according to how they perceive the threats to security.

In attempting to determine who possesses the power to set the agenda for security, it is worth noting that because of the multiple jurisdictions in IWRM, it is unrealistic to

assume that any one level or actor can singly exert power over water governance. The crucial governance question revolves around two poles. Firstly, it centres on the relationship between the supra-national institutions and the governments whose behaviour they are intended to change. Secondly, the governance question centers on the relationship between the governments and the people at the sub-national levels. Some useful insights might be gained from examining these relationships in their historical context.

History shows that in their pursuit of economic objectives, many governments of Southern Africa have tended to compromise human, social and environmental security, particularly with regard to marginalized people and places. The construction of the Westphalian state has failed over much of the region (Swatuk & Vale, 2000), and national political structures and economic processes have been subject to multiple interests that have often conflicted, corrupted and co-opted the ideals of governance. The assumption by Agenda 21 that democratic governments are more likely to pursue sustainable development has run aground, partly because accountability in many of the 'democratized' states remains incomplete (Walker, 2000).

The implication of this for water and security in Southern Africa therefore is that, while the state might purport to promote social, economic and environmental security within its political boundaries, in harmony with the broader regional and global security interests, often it seems that governments are more concerned with the political security of the ruling party and its constituency.

On the other hand, the civic public realm in Southern Africa has lacked the civic qualities required to generate a sense of responsibility and accountability among politicians and government officials. Thus, despite the more recently demonstrated political commitment toward a common regional security regime by governments within the region (Swatuk & Omari, 1997), the historical relationship between the governments and civic society raises concern on whether the co-management of water

resources by the state and the represented stakeholder constituencies provides an adequate construct towards the achievement of IWRM outcomes.

It is probably the co-existence of both the *de facto* and *de jure* claims to water, land and related resources by local people in countries such as Zimbabwe that principles such as stakeholder participation are iterated, often as mere palliatives to indigenous people. This probably explains why, despite the articulation of participatory approaches, the conditions enunciated by Agenda 21 remain unchanged and levels of poverty continue to increase, while rural people in particular become further marginalized from resource ownership and the political process (Darkoh, 1996). There is a need therefore to examine more closely the linkage between water, security and development in IWRM in Southern Africa. In particular, the assumption within the framework of 'stakeholder participation' that such involvement is a significant factor contributing towards the achievement of the sustainable development imperatives, namely democracy, efficiency and sustainability, requires some interrogation.

The concern here is with the fact that stakeholder representation is premised on the notion of constituencies. Those constituencies who might feel that they have been marginalized by the formal political system might resort to *de facto* claims to water resources or to water-related political processes. This was indeed observed in the case of the Save Catchment Area and the Pungwe SCC. The women members of the Gatsi Irrigation Scheme (Text Box 1) and landless people occupying commercial farms are cases in point. This argument, however, excludes those "resettled" groups of people who collaborated with the Zimbabwe government's politically orchestrated land invasions. In view of the observed *de facto* claims to resources, there is perhaps a need to examine the differences in the ways the underlying principles of IWRM are conceived at the international and the local levels. These differences provide a plausible explanation for the gap between policy formulation at the global level and policy implementation by river basin institutions at the local level.

The issue of *de facto* claims to water resources and water-related decision-making points to the fact that 'democracy', as conceived by international frameworks and organizations, does not always equate to justice in Southern African countries that retain the colonial and apartheid legacies of spatial inequalities in the distribution of water, land and related resources. Walker (2000) points out that, in cases where relatively successful democratic transitions have taken place, the newly enfranchised people may demand less rather than more environmental protection as they grapple with problems of poverty and unemployment. Thus, to premise IWRM on the principle of democracy, in the hope that social and environmental security will somehow trickle-down through representation to the poor and the disadvantaged is ineffective where the institutional context has remained the same.

In similar vein, although the new water policy of Zimbabwe, for example, has theoretically broadened access to water resources, the actual access to water for commercial use continues to be determined by financial clout. Since the financial power base remains largely the prerogative of the established and the advantaged social groups, equity in access to commercial water particularly for most rural people might remain an elusive ideal. Consequently, although in theory water laws such as Zimbabwe's Water Act of 1998 have abolished the notion of 'private' water in their terminology, the requirement for appropriators to pay for water accords certain privacy rights to the water they have paid for. This explains the conflict between the established commercial and newly resettled farmers in the Save CC over the sharing of water that the former had paid for.

To a large extent, therefore, the seemingly narrow prospects of achieving equity in access to water can be attributed to donor agency conditionalities relating the principle of 'water as an economic good'. While there is no fundamental fault with the requirements that water should be efficiently used and that water management institutions should be self-financing, the problem arises from the way in which the 'water as an economic good' is interpreted and articulated at the operational levels. If indiscriminately applied, the principle might impact negatively on household food

security and livelihood security for the less affluent people in both the rural and urban areas.

In the final analysis, the question: “Whose security?” is determined, as Booth (1994) states, by whoever has the power to set the security agenda. The power base for security shifts both in space and time between institutional actors and actor alliances ranging from the local to the global levels. Within this power flux, the responses by governments to globalisation and localization processes are a critical factor determining whose security will ultimately be addressed.

The foregoing discussion suggests that the prospects for river basin institutions achieving the envisaged outcomes of IWRM are more strongly determined by the embedded contexts than by institutional conformity to a given set of organizational criteria. Institutions such as the Save CC and the Pungwe SCC might yet become more robust in overcoming the local challenges of enhancing coordination, legitimacy, stakeholder participation, conflict resolution, environmental sustainability, and external impacts such as “fast track” devolution and resource redistribution processes. The potential of river basin institutions to contribute towards broader security will largely be determined, however, by the ability of governments to subsume their interests of political survival to the interests of broader security for the broader resource community. Ultimately, however, it is the combined institutional actor commitment to broader security as well as the checks and balances of water politics within the water governance framework that will determine the extent to which the IWRM will be successfully articulated.

CITED REFERENCES

- Agenda 21: An overview. Document prepared by the Bahai Information Office of the UK. Internet (<http://www.iol.ie/~isp/agenda21/agenda/agenda21.htm>), 19 November 2001.
- Arnfred, S. 2000. Women's Movement, Feminist Theory and Development Aid. In **Discussing Women's Empowerment: Theory and Practice**, Sida Studies, 3: 73 – 87.
- Arnstein, S. R. 1969. A Ladder of Citizen Participation. **Journal of the American Institute of Planners**, 35: 216 – 224.
- Ashton, P. 2000. Southern African Water Conflicts: Are they Inevitable or Preventable? In: Solomon, H. & Turton, A. (Ed.), **Water Wars: Enduring Myth of Impending Reality?**, 65 – 102. Centre for International Political Studies, University of Pretoria, Pretoria.
- Booth, K. 1994. **A Security Regime in Southern Africa: Theoretical Considerations**. Paper presented at the Conference on 'Security, Development and Cooperation in Southern Africa', held in Midgard, Namibia, 23 to 27 May. Conference Organized by CSAS, University of the Western Cape and Peace Research Institute, Frankfurt.
- Borrini-Feyerabend, G. (Ed.). 1997. **Beyond Fences: Seeking Social Sustainability in Conservation**. Gland (Switzerland): IUCN.
- Bromley, D. W. 1985. Closing Comments at the Conference on Common Property Resources Management. In the **Proceedings of a conference on Common Property Resources Management**, 593 - 598. April. Washington DC: National Academy Press.
- Bromley, D. W. 1992. The Commons, Property and Common-Property Regimes. In Bromley, D. W. (Ed.), **Making the Commons Work**, 3 – 15. San Francisco: Institute for Contemporary Studies.
- Carmo Vaz, A. & Lopes Pereira, A. 2000. The Incomati and Limpopo International River Basins: A View From Downstream. **Water Policy** 2: 1; 2.
- Chatterjee, P. & Finger, M. 1994. **The Earth Brokers: Power, Politics and World Development**. London: Routledge.
- Cox, R. W. 1997. Introduction. In Cox, R. W. (Ed.), **The New Realism**, xv – xxx. Chippenham (Wiltshire): Antony Rowe Ltd.
- Derman, B. & Ferguson, A. 2000. **The Value of Water: Political Ecology and Water Reform in Southern Africa**. Paper prepared for the panel discussion on Political Ecology for the Annual Meeting of the American Anthropological Association, San Francisco, November 15 – 19.
- Dovers, S. 2001. Institutional Barriers and Opportunities: Processes and Arrangements for Natural Resources Management in Australia. **Water Science and Technology**, 43 (9): 215 - 226.
- Eckersley, R. 1992. **Environmentalism and Political Theory: Toward an Eccentric Approach**. New York: UCL Press.
- Elhance, A. P. 1999. **Hydropolitics in the Third World: Conflict and Cooperation in International River Basins**. Washington DC: United States Institute of Peace press.
- Falkenmark, M. & Lundqvist, J. 1995. Looming Water Crisis: New Approaches are Inevitable. In Ohlsson, L. (Ed.), **Hydropolitics: Conflicts over Water as a Development Constraint**, 178 – 212. London: Zed Books.

Friedmann, J. & Weaver, C. 1979. **Territory and Function: The Evolution of Regional Planning**. Los Angeles: University of California Press.

Ghai, D. & Vivian, J. M. 1995. **Grassroots Environmental Action: People's Participation in Sustainable Development**. London: Routledge.

Golubev, G. N. & Biswas, A. K. 1985. Large Scale Water Transfers: Emerging Environmental and Social Experiences. In: Golubev, G. N. & Biswas, A. K. (Ed.), **Large Scale Water Transfers: Emerging Environmental and Social Experiences**, 1 - 6. Oxford: Tycooly Publishing Ltd.

GTZ. 2000. **History and Lessons Learned from the Formation of the Mazoe Catchment Council, Zimbabwe**. Reform on the Reform of the Water Sector in Zimbabwe, March.

Hackett, S. C. 1992. Heterogeneity and the Provision of Governance for Common-Pool Resources. **Journal of Theoretical Politics**, 4 (3): 325 – 342.

Hara, M. 1999. **Fisheries Co-Management: A Review of the Theoretical Basis and Assumptions**. Southern African Perspectives, No. 77. CSAS, School of Government, University of the Western Cape.

Hardin, G. 1977. The Tragedy of the Commons. In Hardin, G. & Baden, J. (Ed.), **Managing the Commons**, 16 – 31. San Francisco: W. H. Freeman and Co.

Hasler, R. 1995. **Political Ecologies of Scale: The Multi-tiered Co-management of Zimbabwean Wildlife Resources**. IIED Wildlife and Development Series, 7: 1 – 16.

Hoff, M. D. 1998. Sustainable Community Development: Origins and Essential Elements of a New Approach. In Hoff, M. D. (Ed.), **Sustainable Community Development: Studies in Economic, Environmental and Cultural Revitalisation**. Boca Raton (Florida): Lewis Publishers.

IIED. 1994. **Whose Eden?: An Overview of Community Approaches in Wildlife Management**. London: IIED.

Katerere, Y. 1997. **Water Resources Management in Nyanga District**. Internet (<http://www.lead.org>).

Latham, J. 2001. **Experiences on Equity, Efficiency and Sustainability in IWRM in the Manyame Catchment Council of Zimbabwe**. Paper presented at a Seminar held at IHE-Delft/Waternet, University of Zimbabwe, Harare on 22 June.

Leysens, A. & Thompson, L. 1999. The Evolution of the Global Political Economy. In Nel, P. & McGowan, P. J. (Ed.), **Power, Wealth and Global Order**, 19 – 46. Rondebosch: Foundation of Global Dialogue & University of Cape Town Press.

Little, P. D. 1994. The Link between Local Participation and Improved Conservation: A Review of Issues and Experiences. In Western D. & Wright, R. M. (Ed.), **Natural Connections: Perspectives in Community-based Conservation**, 347 – 372. Washington DC: Island Press.

MacNair, M. 1976. Processes of Coordination. **Ekistics**, 42 (251): 245 – 247.

Manikutty, S. 1997. Community Participation: So what? Evidence from a Comparative Study of Two Rural Water Supply and Sanitation Projects in India. **Development Policy Review**, 15 (2): 115 – 140.

March, C. et al (Smyth, I. & Mukhopadhyaya, M.). 1999. **A Guide to Gender Analysis Frameworks**. Oxford: Oxfam GB.

Marchand, M. H. *et al* (Boas, M. & Shaw, T. M.). 1999. The Political Economy of New Regionalisms. In **Third World Quarterly**, 20: 5, 897 – 910.

Mazambani, D. 1997. **North-Eastern Highlands of Zimbabwe**. Internet (<http://www.lead.org>).

McCarney, P. 2000. Thinking About Governance in Global and Local Perspective: Resonance and Dissonance between two Discourses. **Urban Forum**, 11 (1): 1 – 29.

Meinzen-Dick, R. S. & Bruns, B. R. 2000. Negotiating Water Rights: Introduction. In Bruns, B. R. & Meinzen-Dick, R. S. (Ed.), **Negotiating Water Rights**, 23 – 55. London: Intermediate Technology Publications Ltd.

Mostert, E. 1999. Paradigms for Water Management. In Wessel, J., Wind, H. G. & Mostert, E. (Ed.), **Paradigms in Water Management**, 21 – 29. Proceedings of a Workshop held within the framework of the European Thematic Network of Education and Training, Delft University, 5 March.

Murungweni, Z. N. 2001. **Water Sector Reform in Zimbabwe: Water Sector in Historical Perspective**. Paper presented at a seminar for the M. Phil Water Studies Group (CSAS, University of the Western Cape) held in Harare on 22 June.

Ndamba, J. 2000. **Assessment of Integrated Water Resource Management Activities in the Southern African Region: A Preliminary Inventory**. Institute for Water and Sanitation Development, Harare. Internet (<http://www.thewaterpage.com>).

Nel, P. 1999. Theories of International Relations. In Nel, P. & McGowan, P. J. (Ed.), **Power, Wealth and Global Order**, 47- 70. Rondebosch: Foundation of Global Dialogue & University of Cape Town Press.

Nhidza, E. 2001. Implications of Water Sector to Local Authorities in Zimbabwe. In **The Zimbabwe Engineer**, March, 13 –16.

NORCONSULT. 2000. Report by the Environmental Audit Team for the Mutare Water Project, Zimbabwe. Internet (<http://www.norconsult.com>), 6 April.

North, D. C. 1990. **Institutional Change and Economic Performance**. Cambridge: Cambridge University Press.

Oakerson, R. J. 1985. A Model for the analysis of Common Property Problems. In the **Proceedings of a conference on Common Property Resources Management**, 13 – 29. April. Washington DC: National Academy Press.

Oakerson, R. J. 1992. Analysing the Commons: A framework. In Bromley, D. W. (Ed.), **Making the Commons Work**, 3 – 15. San Francisco: Institute for Contemporary Studies.

Ohlsson, L. 1995a. **Water and Security in Southern Africa**. Publications on Water Resources No. 1 of the Department of Water Resources, Sida, Stockholm, November.

Ohlsson, L. 1995b. The Role of Water and the Origins of Conflict: Introduction. In Ohlsson, L. (Ed.), **Hydropolitics: Conflicts over Water as a Development Constraint**, 1 - 28. London: Zed Books.

Ostrom, E. 1985. Issues of Definition and Theory: Some Conclusions and Hypotheses. In the **Proceedings of a conference on Common Property Resources Management**, 599 - 615. April. Washington DC: National Academy Press.

Ostrom, E. 1990. **Governing the Commons: The Evolution of Institutions for Collective Action**. Cambridge: Cambridge University Press.

- Pallett, J. (Ed.). 1997. **Sharing Water in Southern Africa**. Desert Research Foundation, Namibia.
- Parpart, J. L. *et al* (Rai, S. & Staudt, K.). 2001. Chapter One: Introduction. In: Parpart, J. L., Rai, S. & Staudt, K. (Ed.). **Rethinking Empowerment, Gender and Development**.
- Parpart, J. L. *et al* (Rai, S. & Staudt, K.) 2001. Chapter One: Introduction. In Parpart, J. L., Rai, S. & Staudt, K. (Ed.), **Rethinking Empowerment, Gender and Development**. [Publication details to be ascertained].
- Rudengren, J. *et al* (Bullock, A., Schmidt, M & Williams, H.). 1997. **Environmental Security and Water Management in Southern Africa**. Feasibility Study of the Sida/MISTRA Proposed Research Programme, Stockholm, March
- Runge, C. F. 1992. Common Property and Collective Action in Economic Development. In Bromley, D. W. (Ed.), **Making the Commons Work**, 3 – 15. San Francisco: Institute for Contemporary Studies.
- Savenige, H. H. G. & van der Zaag, P. 2000. Conceptual Framework for the Management of Shared River Basins; with Special Reference to the SADC and the EU. **Water Policy** 2 (1): 2, 9 – 45.
- Shaw, T. M. 1997a. Post-apartheid South(ern) Africa in the New International Division of Labour and Power: How Marginal? In: Swatuk, L. A. & Black, D. R. (Ed.), **Bridging the Rift: The New South Africa in Africa**. Boulder: Westview Press.
- Shaw, T. M. 1997b. **The Globalisation Syndrome: Transformation and Resistance**.
- Sithole, B. 2000. **Telling it like it is: Devolution in the Water Reform Process in Zimbabwe**. CASS, University of Zimbabwe.
- Skanska. 1999. **Pungwe-Mutare Water Project**. Internet (<http://www.mbendi.co.za>).
- Soderbaum, F. 1998. The New Regionalism in Southern Africa. **Politeia**, 17 (3): 75 – 94. Department of Peace and Development Research, Goteborg University.
- Stohr, W. B. 1981. Development from Below: The Bottom-up, Periphery-inward Development Paradigm. In Stohr, W. B. & Taylor, D. R. F. (Ed.), **Development from Above or Below: The Dialectics of Regional Planning in Developing Countries**, 39 – 71. Chichester: John Wiley & Sons.
- Swain, A. 2000. Water Scarcity as a Source of Crises. In Nafziger, E. W., Stewart, F. & Varynen, R. (Ed.), **War, Hunger, and Displacement: The Origins of Human Emergencies**, 179 – 205. Oxford: Oxford University Press.
- Swain, A. & Stalgren, P. 2000. Managing the Zambezi: The Need to Build Water Institutions. In Tevera, D. & Moyo, S. (Ed.), **Environmental Security in Southern Africa**, 119 – 138. Mount Pleasant (Harare): SARIPS.
- Swatuk, L. A. & Omari, A. H. 1997. Regional Security: Southern Africa's "Mobile Frontline". **Southern African Perspectives**, 61. Centre for Southern African Studies, University of the Western Cape.
- Swatuk, L. A. & Vale, P. 2000. **Swimming Upstream: Water and Discourses of Security**. Bellville: CSAS, School of Government, University of the Western Cape.
- Thompson, L. & Swatuk, L. A. 2000. **Gender and Ecosystems: Reframing Southern African "Security"**. Security, Ecology and Community Working Papers Series (1). CSAS, School of Government, University of the Western Cape.

Turton, A. 1999. **Water and Social Stability: The Southern African Dilemma**. Paper presented at the 49th Pugwash Conference on Confronting Challenges of the 21st Century, Working Group No. 5: The Environment. Rustenburg, 7–13 September.

UNESCO. 2000. **The Dublin Statement on Water and the Environment**. Internet (<http://www.unesco.org/science/waterday2000/dublin-french.htm>)

Walker, P. A. 2000. Democracy and Environment: Congruence or Contradiction? **Commons Southern Africa**, 2 (1): 4–6.

Warburton, D. 1998. A Passionate Dialogue: Community and Sustainable Development. In Warburton, D. (Ed.), **Community and Sustainable Development: Participation in the Future**, 1–39. London: Earthscan Publications.

Water Resources Management: Technical Document. 1996. Presented at the Summit of the Americas on Sustainable Development, Santa Cruz. Internet (<http://environment.harvard.edu/cumbre/eng/wter0004.htm>), Harvard Environmental On-line.

WCED. 1987. **Our Common Future**. Oxford: Oxford University Press.

Western D. & Wright, R. M. 1994. The Background to Community-based Conservation. In Western D. & Wright, R. M. (Ed.), **Natural Connections: Perspectives in Community-based Conservation**, 1–12. Washington DC: Island Press.

Zaag, P. van der. 2001a. **Water Resources Management: Concepts and Definitions**. Chapter 1, Reader 1, **SOG829.2**, 2–37.

Zaag, P. van der. 2001b. **Water Resources Management: Case Study of the Pungwe Basin**. Chapter 5, Reader 2, **SOG829.2**, 2–32.

Zaag, P. van der. 2001c. **Water Resources Management: Urban Water Demand**. Chapter 3, Reader 2, **SOG829.2**, 2–32.

Zimbabwe. 1998. **The Water Act**. Government Printers, Harare.

Zimbabwe. 2000a. **Water (River Systems) Declaration Notice**. Statutory Instrument 34 of 2000. Government Printers, Harare.

Zimbabwe. 2000b. **Memorandum of Understanding on the Development of the Pungwe Rivewr Basin Joint Integrated Water Resource Management Strategy**. Department of Water Development, Harare.

Zimbabwe. 1995. **Towards a Strategy for Integrated Water Resources Management in Zimbabwe**. Water Resources Management Strategy (WRMS) Document prepared by the WRMS Technical Secretariat, Harare.

APPENDIX 1 VARIABLES AND THEIR OPERATIONALISATION

VARIABLE	LEVEL OF OBSERVATION			METHOD OF OBSERVATION	OPERATIONALIZATION
	Save CC	Pungwe SCC	Proj S/holder		
CONTEXT	Historical Background			Documentation Literature Survey	Review of the process & outcomes of previous water management regime
	Unfolding Policy Environment & Governance Framework	x	x	Documentation In-depth qualitative interviews	Review of policy, legal & organization reforms; examination of the hierarchical nesting of institutional structures
	Age of Councils	x	x	Documentation In-depth qualitative interviews	Duration of institutional operations
PROCESS VARIABLES	Organisational Structure	x	x	Documentation In-depth qualitative interviews	Pattern of interactions between the two councils & with other structures in the hierarchy
	Representation	x	x	Direct observation Documentation & recorded minutes of meetings In-depth qualitative interviews	Impressions of whose interests are represented Do those represented in the councils feel that their interests are effectively represented?
	Responsiveness to Participation	x	x	Observation of meetings Documented minutes In-depth qualitative interviews	How do the state sector actors respond to participation by other actors? How do the other actors respond to the opportunity to participate & to the participation of other stakeholders?
	Accountability & Transparency	x	x	Observation of meetings Documented minutes In-depth qualitative interviews	Are meetings open to public observation? Are decisions communicated to the public? Is the use of funding & levies publicly reported?

VARIABLE	LEVEL OF OBSERVATION				METHOD OF OBSERVATION	OPERATIONALIZATION
	Save CC	Pungwe SCC	Proj	S/holder		
PROCESS VARIABLES	Enforcement & Monitoring	x	x	x	Documentation In-depth qualitative interviews	What enforcement & monitoring measures are in place? To what extent have compliance & non-compliance been observed? What are the strengths & constraints of monitoring & enforcement?
	Relationship with rural communities & their traditional authorities		x	x	Observation of meetings Documented minutes In-depth qualitative interviews	
	Relationship with other sectoral actors	x	x	x	Observation, minutes of meetings In-depth qualitative interviews	
	Types of measures of institutional performance	x	x	x	Documentation In-depth qualitative interviews	Are there specific achievement indicators to measure outcomes, e.g. the Gender Empowerment Measure?

VARIABLE	LEVEL OF OBSERVATION				METHOD OF OBSERVATION	OPERATIONALIZATION
	Save CC	Pungwe SCC	Proj	S/holder		
RESILIENCE VARIABLES						
	Legitimacy	x	x		x	<p>Impressions on the capacity of councils to effectively perform the governance functions they have assumed.</p> <p>To what extent have the procedure & content of the institutions been acceptable (i.e. transparent & fair)?</p>
	Robustness	x	x		x	<p>Impressions on the effectiveness of institutional coordination, information dissemination, monitoring & enforcement & representation, especially of gender interests.</p> <p>Is there any concerted effort to promote equitable gender participation in decision-making?</p> <p>Is there any effort to build institutional capacity through training?</p> <p>Who is targeted for such training if any?</p> <p>Is there any training in organizational development, the participatory approach & conflict resolution?</p>
	Compliance	x	x		x	<p>Attitudes to compliance ?</p> <p>What enforcement measures are taken to deal with non-compliance?</p>

VARIABLE	LEVEL OF OBSERVATION				METHOD OF OBSERVATION	OPERATIONALIZATION
	Save CC	Pungwe SCC	Proj	S/holder		
Equity	x	x			Documentation In-depth qualitative interviews	Participation by stakeholders Representation of men's & women's interests Access to water by all users
Efficiency	x	x			Documentation In-depth qualitative interviews	In reducing transaction costs associated with water sector reform eg relating to communication, coordination & enforcement. In the provision of water, through applying the user pays principles. In the avoidance of waste through water loss.
Sustainability	x	x			Documentation In-depth qualitative interviews	Of the council's implementation of functions, even in the face of constraints experienced. Considerations of the sustainability of livelihoods and food security. Considerations in allocation decisions of ecosystem requirements for water.
OUTCOME VARIABLES						

VARIABLE	LEVEL OF OBSERVATION			METHOD OF OBSERVATION	OPERATIONALIZATION
	Save CC	Pungwe SCC	Proj S/holder		
STAKEHOLDER POWER RELATIONS	x	x		Documentation In-depth qualitative interviews	Legal hierarchy (command & control; budget holders). Authority of Leadership (formal & informal, charisma, political & cadre connections). Control of strategic resources (eg suppliers of funding, possessors of expertise). Negotiation position in relation to other stakeholders.
	x	x		Documentation In-depth qualitative interviews	Social, economic & political status. Degree of organization, consensus & leadership in the group. Informal influence through links with other stakeholders. Degree of dependence on other stakeholders.
	x	x	x	Documentation In-depth qualitative interviews	What measures are in place to resolve conflicts? How effective have these measures in the past experiences, e.g relating to the Pungwe Project?

APPENDIX 2 IN-DEPTH QUALITATIVE INTERVIEW QUESTIONS: CATCHMENT/ SUB-CATCHMENT COUNCIL LEVEL

A: PROCESS VARIABLES

1. When was the Catchment/ Sub-Catchment Council formed?
2. In terms of the new Water Law, how does the council interact with the other structures within the water governance hierarchy?
3. **Representation**
 - a. Which stakeholders are represented in the council?
 - b. In your own view, do you think all the relevant stakeholders have been included within the council?
 - c. Do you get the impression that those represented feel that their interests are effectively represented?
 - d. Do the poor people, particularly women in the rural areas, have a voice in decision-making?
 - e. How many women participate in the council's decision-making?
 - f. Are there any specific targets for gender empowerment? If so, what %s are targeted for participation by men and women?
4. **Responsiveness to Participation**
 - a. The views of the stakeholders represented in the council probably vary, and stakeholder interests in water resource may also differ. How do the catchment manage/juggle with these variations and differences, even conflicts, among stakeholders?
 - b. From your observations, how do stakeholders respond to each other's participation in decision-making? Is there any reticence, dominance, hostility, cooperation etc? If any, please elaborate.

- c. Do you think there is any way in which stakeholder participation can be improved?
- d. Do you think there is any need for capacity-building in organizational development, participatory approaches and conflict resolution?

5. Accountability and Transparency

- a. Are council meetings open to observers from the public?
- b. Are council decisions communicated to the public?
- c. What media are used for such communication?
- d. Is the use of funds (e.g. from government, donors or levies) publicly reported?

6. Monitoring and Enforcement

- a. What mechanisms are in place for monitoring compliance and enforcing laws and regulations?
- b. To what extent have compliance and non-compliance been observed? (e.g. with regard to water permits and water allocations?)
- c. What do you view as the main strengths and weaknesses in monitoring and enforcement?

7. Relationships with Rural Communities and Traditional Authorities

- a. What is the nature of the relationship between the council and rural communities and traditional authorities within the Pungwe River Basin area?

b. Could you briefly describe how these communities and traditional authorities related with water governance authorities in the case of the Pungwe-Mutare Water Supply Project?

8. **Relationships with Urban Civic Organization & Other Sectoral, NGO and Private Sector Actors**

- a. Could you perhaps describe how these actors responded to the Pungwe Project?
- b. With regard to those actors who had reservations about the project, how did they propose the water institutions should address their concerns?

9. **Types of Measures of Institutional Capacity Used**

- a. Are there any specific measures to indicate the achievement of targets or outcomes (equity, efficiency & sustainability)/
- b. Are there any specific measures of gender empowerment (GEM)?

B. INSTITUTIONAL RESILIENCE

1. Legitimacy
 - a. What are your impressions on the council's capacity to effectively perform the duties it has assumed? For example, is the council able to effectively enforce the new water laws, ensure equitable allocation of water and resolve conflicts?
 - b. To what extent have the decision-making and water allocation processes been acceptable to the various stakeholders?

2. **Robustness**
 - a. What are your impressions on the effectiveness of institutional coordination with other related sectors e.g. the Department of Natural Resources (NB: DNR's Stream Bank Cultivation Act) and the Municipality of Mutare?
 - b. How good is the communication of information within the water sector institutions and between the Catchment/ Sub-Catchment Council and other related sectors?

3. **Compliance**

- a. Have all the stakeholders accepted that:
 - There is a need for reallocation of water to ensure equity in access?
 - Apart from the use of water for primary purposes, water users should pay for their consumption of water?
 - It is important to reserve sufficient water for the downstream users e.g. in the Mutasa Communal Lands and Mozambique, and for ecosystem requirements?

C OUTCOME VARIABLES

Would you describe the council's achievements in the following as excellent, good, fair, unsatisfactory or very poor?

1. **Equity**
 - a. Among stakeholders involved in council decision-making;

- b. In the representation of men and women's interests in decision-making;
 - c. In ensuring fair access to water by all users.
- 2. Efficiency**
- a. In reducing the transaction costs (coordination, communication of information and enforcement) associated with the reform;
 - b. In the provision of water through the user pays principle;
 - c. In the avoidance of waste through water loss.
- 3. Sustainability**
- a. Of the council's implementation of functions;
 - c. Considerations of sustainability of livelihood and food security;
 - d. Considerations of ecosystem requirements for water.

APPENDIX 3 IN-DEPTH QUALITATIVE INTERVIEW QUESTIONS: PUNGWE-MUTARE PROJECT LEVEL

1. When was the project initiated?
2. For how long has the project been operating?
3. Which water governance institutions were/are involved in the project formulation process?
4. What were/are the roles of the water institutions in the project?
5. What other institutions were involved?
6. What were their interests in the project?
7. Were/are there any structures that deal with the assessment and monitoring of project impacts?
8. Who was/is involved in these structures?
9. Were/are there any women participating in these structures? If so, what is the nature of their involvement?
10. How else were/are women's interests represented with regard to the Pungwe-Mutare Project?

APPENDIX 4 IN-DEPTH QUALITATIVE INTERVIEW QUESTIONS: STAKEHOLDER LEVEL

A: PROCESS VARIABLES

1. Representation

- d. Which stakeholders are represented in the council?
- e. In your own view, do you think all the relevant stakeholders have been included within the council?
- f. Do you get the impression that those represented feel that their interests are effectively represented?
- g. Do the poor people, particularly women in the rural areas, have a voice in decision-making?
- h. How many women participate in the council's decision-making?
- i. Are there any specific targets for gender empowerment? If so, what %s are targeted for participation by men and women?

2. Responsiveness to Participation

- j. The views of the stakeholders represented in the council probably vary, and stakeholder interests in water resource may also differ. How do the catchment manage/juggle with these variations and differences, even conflicts, among stakeholders?
- k. From your observations, how do stakeholders respond to each other's participation in decision-making? Is there any reticence, dominance, hostility, cooperation etc? If any, please elaborate.
- l. Do you think there is any way in which stakeholder participation can be improved?

m. Do you think there is any need for capacity-building in organizational development, participatory approaches and conflict resolution?

3. Accountability and Transparency

- n. Are council meetings open to observers from the public?
- o. Are council decisions communicated to the public?
- p. What media are used for such communication?
- q. Is the use of funds (e.g. from government, donors or levies) publicly reported?

4. Monitoring and Enforcement

- r. What mechanisms are in place for monitoring compliance and enforcing laws and regulations?
- s. To what extent have compliance and non-compliance been observed? (e.g. with regard to water permits and water allocations?)
- t. What do you view as the main strengths and weaknesses in monitoring and enforcement?

5. Relationships with Rural Communities and Traditional Authorities

- c. What is the nature of the relationship between the council and rural communities and traditional authorities within the Pungwe River Basin area?
- d. Could you briefly describe how these communities and traditional authorities related with water governance authorities in the case of the Pungwe-Mutare Water Supply Project?

6. Relationships with Urban Civic Organization & Other Sectoral, NGO and Private Sector Actors

- c. Could you perhaps describe how these actors responded to the Pungwe Project?
- d. With regard to those actors who had reservations about the project, how did they propose the water institutions should address their concerns?

7. Types of Measures of Institutional Capacity Used

- c. Are there any specific measures to indicate the achievement of targets or outcomes (equity, efficiency & sustainability)/
- d. Are there any specific measures of gender empowerment (GEM)?

B. INSTITUTIONAL RESILIENCE

1. Legitimacy

- c. What are your impressions on the council's capacity to effectively perform the duties it has assumed? For example, is the council able to effectively enforce the new water laws, ensure equitable allocation of water and resolve conflicts?
- d. To what extent have the decision-making and water allocation processes been acceptable to the various stakeholders?

- 2. Robustness**
- e. What are your impressions on the effectiveness of institutional coordination with other related sectors e.g. the Department of Natural Resources (NB: DNR's Stream Bank Cultivation Act) and the Municipality of Mutare?
 - f. How good is the communication of information within the water sector institutions and between the Catchment/ Sub-Catchment Council and other related sectors?

3. Compliance

- d. Have all the stakeholders accepted that:
- There is a need for reallocation of water to ensure equity in access?
 - Apart from the use of water for primary purposes, water users should pay for their consumption of water?
 - It is important to reserve sufficient water for the downstream users e.g. in the Mutasa Communal Lands and Mozambique, and for ecosystem requirements?

C OUTCOME VARIABLES

Would you describe the council's achievements in the following as excellent, good, fair, unsatisfactory or very poor?

- 1. Equity**
- d. Among stakeholders involved in council decision-making;

- e. In the representation of men and women's interests in decision-making;
 - f. In ensuring fair access to water by all users.
- 2. Efficiency**
- a. In reducing the transaction costs (coordination, communication of information and enforcement) associated with the reform;
 - e. In the provision of water through the user pays principle;
 - f. In the avoidance of waste through water loss.
- 3. Sustainability**
- a. Of the council's implementation of functions;
 - g. Considerations of sustainability of livelihood and food security;
 - h. Considerations of ecosystem requirements for water.



APPENDIX 5 RECORD SHEET FOR THE RESPONDENTS INTERVIEWED

Date	Respondent Name	Institutional Affiliation	Designation in Institution	Designation in CC / SCC
29/06/01	Mr Mapondera	Pungwe SCC/ZFU	Pungwe SCC Deputy Chairman	Save CC Councillor
02/07/01	Mr Muriye	ZINWA	Save Catchment Manager	Technical Advisor
02/07/01	Mr Muzaqana-Sithole	Save CC	Training Officer	Employee
03/07/01	Mr Rob Latham	Save CC/Odzi SCC/CFU	Save CC/Odzi SCC Chairman	Save CC Chairman
09/07/01	Mr Middleton	Pungwe SCC/CFU	Pungwe SCC Chairman	Save CC Councillor
09/07/01	Mrs Nyakutombwa	Pungwe SCC	Pungwe SCC Councillor	Women's Representative
09/07/01	Ms Muriri	Pungwe SCC	Pungwe SCC Councillor	Women's Representative
27/06/01	Mr Mupingo	Min. of Local Govt.	Provincial Administrator	Stakeholder: Local Authority
04/07/01	Mr Muskwe	Mutare City Council	Water & Sanitation Engineer	Stakeholder: Local Authority
25/06/01	Mr Nyikaramba	Dept. of Natural Resources	Provincial Officer	Service Sector
10/07/01	Mr Chereni	Min. of Youth, Gender & Employment Creation	Gender Officer: IRWSSP	Related Sector (Rural Water Supply & Sanitation)
27/06/01	Mr Chindawande	Min. of Local Govt. (IRWSSP Local Co-ordination)	Assistant Provincial Administrator	Stakeholder: Local Authority
28/06/01	Mr Mudege	IWSD (IRWSSP Management)	Director	None
17/07/01	Ms Palmeberg (Unavailable)	SIDA	Programme Manager	Donor Agency for Save CC and Pungwe SCC
19/07/01	Mrs Goromonzi	NAC (IRWSSP: National)	Programme Manager	None
22/06/01	Eng. Murungweni	GTZ / DWD	Advisor & Consultant to the DWD	None
22/06/01	Mr Jim Latham	Manyame CC	Councillor representing CFU	None
20/06/01	Mr Schönbauer	IWSD	Consultant: CCs/SCCs Training Manual	None

APPENDIX 6: ACRONYMS AND ABBREVIATIONS

AGRJTEX	Agricultural Technical and Extension Services (Department of)
CC	Catchment Council
CFU	Commercial Farmers Union
CPR	Common Property Resource
DANIDA	Danish International Development Agency
DNR	Department of Natural Resources
DWD	Department of Water Development
FAO	Food and Agricultural Organization
FRIEND	Flow Regimes from International Experimental and Network Data
GAD	Gender and Development
GEM	Gender Empowerment Measure
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit
GWP	Global Water Partnership
ICM	Integrated Catchment Management
IIED	International Institute of Environment and Development
IMF	International Monetary Fund
IRWSSP	Integrated Rural Water Supply and Sanitation Programme
IUCN	International Union for the Conservation of Natural Resources
IWRM	Integrated Water Resources Management
NAC	National Action Committee (Leader Organization for the Zimbabwe's Sub-Committee on Primary Water Supplies)
NGO	Non-Governmental Organization
RDC	Rural District Council
SADC	Southern Africa Development Council
SCC	Sub-Catchment Council
SIDA	Swedish International Development Agency
UN	United Nations
UNDP	United Nations Development Programme
UNESCO	United Nations Education Scientific and Cultural Organization
WAD	Women and Development
WID	Women in Development
ZFU	Zimbabwe Farmers Union
ZINWA	Zimbabwe National Water Authority