CHAPTER 1: INTRODUCTION

1.1 Background of the Study

The world has about 263 international rivers (Giordano, Wolf, 2003:6). Africa has 63 international rivers and about 15 river basins which include the Limpopo, Maputo, Nile, Incomati, Buzi, Congo, Okavango, Pungwe, Cunene, Orange, Save, Cuvelai, Umbeluzi, Zambezi and Ruvuma (Food and Agriculture Organisation, 2003:1). About half of the 63 international rivers in Africa are shared by three or more riparian countries and 10 basins are shared by three or more riparian countries and 10 basins are shared by four countries (Obae, 2006:11). Southern Africa has about 15 international rivers and 3 major basins that are the Okavango Basin, the Limpopo Basin and the Zambezi Basin. The Zambezi Basin covers 8 nations while the other two cover four riparian states each to make a total of 16 nations on 3 river basins. As a shared resource, water therefore has strategic significance in Southern Africa as it grapples "with the complexities and consequences of environmental security research," (Turton, 1997:6).

The choice of this study, the Limpopo Basin is a region of intense water scarcity, floods and droughts. Economic scales in the Limpopo riparian states show widespread poverty and under- development. All the four riparian states, namely Botswana, South Africa, Mozambique and Zimbabwe, are members of the Southern Africa Development Community (SADC). SADC is a 14 member grouping of Southern African states which are Malawi, Zambia, Tanzania, Mozambique, Mauritius, Madagascar, Democratic Republic of Congo, Angola, South Africa, Namibia, Botswana, Zimbabwe, Swaziland and Lesotho. These countries have a history of shared conflict, especially during apartheid South Africa's total strategy that destabilized the region (O'Meara, 1985:9). However, with the demise of apartheid, the evolvement of a regional organization that became known as SADC occurred, although South Africa remains much more developed than other SADC members (Phimister, 2004:12). The stabilization of Southern Africa enabled SADC to extend its approach to regional integration and security- reflecting a widening concept of security- to include human and environmental security. This reflected "Africa's evolving security architecture and the concept of multi-layered security communities" (Franke, 2008:14). Since its formation in 1980 SADC has experimented with different approaches to regional integration in order to guide its strategy for regional cooperation, sustainable development and integration. This is envisioned in the SADC Treaty, signed on 17 August 1992 in Windhoek Namibia, to copy

with complex regional and global changes, facilitating cross border trade, and achieving economic integration with the understanding that it was more feasible on a regional than national basis (Nhara, 2003:1). Peace has therefore created conditions necessary for a deeper, wider and sustained process of regional integration

Hydropolitics in SADC became codified in the SADC Protocol on Shared Water Course Systems (1995), the Regional Water Policy, the Regional Water Strategy, and the Regional Strategic Action Plan on Integrated Water Resource Development and Strategy. The SADC Protocol on Shared Water Course Systems was revised in 2000 to include clauses from the 1997 UN Convention on the Law of Non- Navigational Uses of International Watercourses. The subsequent Revised SADC Protocol on Shared Water Course Systems (2000) can be viewed as 'a vehicle for regional integration' (Kidd and Quinn, 2005 in Fatch, 2009:5).

State control over water resources in certain instances passed on to other players such as regional authorities creating a unique relationship between regional maritime law and municipal law. An influx of mostly developed countries, international organizations and non-governmental organizations have joined the pack among them the World Bank which have advocated for transfrontier control of water resources under a philosophy of integrated water resources management. This has crystallized in the establishment of the Limpopo Watercourse Commission (LIMCOM) by the four riparian states. This can be said to have been in line with trends on the global front and the political economy of complex interdependency and international institutionalism (Steans and Pettiford, 2001:6). Transboundary governance has not been limited to water but to other natural resources such as parks and wildlife and its drivers "range from basic development needs to external factors influencing Southern Africa"(Katerere et al, 2001). These interstate arrangements restrict state sovereignty whilst broadening regional co-operation. Assertions have then been made that "water is recognized as a fundamental political weapon in the Southern African region. Water will increasingly shape the international relations and security arrangements of Southern Africa." (Institute for Security Studies, 1998 in Interpress Services, 2008:1). This forms the strategic value of water governance in SADC's regional integration.

1.2 Statement of the Problem

It is important to identify the drivers, processes and outcomes of transboundary water management in SADC. A unique set of politics and economy has evolved because of individual and shared water concerns (Katerere et al, 2001:4). Transboundary water management is the cooperative management, by riparian states, of a water resource that transcends national (sovereign) political boundaries – including river and lake basins. Transboundary water management in SADC is guided by international agreements; regional agreements; basin-level agreements; bilateral agreements; and multilateral agreements. It is not clear how much these concerns have fed into the agenda of SADC regional integration (Lautze and Giordarno, 2007:4). These commitments by states have implications on states sovereignty and can be interpreted in the context of regional political and environmental systems. Notably, transboundary water management, as that of the Limpopo Basin, affects other issues like foreign direct investment, economic growth, tourism, trade and sustainable development. The task here is to present a dimension to a basic typology of regional integration by studying the Limpopo Basin transboundary water management in a SADC context. Transboundary water management which usually takes the form of river basin organizations is a sector approach, itself subsumed, in greater SADC regional integration.

1.3 Objectives

1. To analyse transboundary water management in SADC through the Limpopo Agreement of 2003.
2. To establish the relationship of the Limpopo Basin's transboundary water management and regional integration in SADC.
3. To analyse the influence of international forces on regional water governance trends.
4. To investigate the impact of river basin organizations on regional peace, security and sustainable development.

1.4 Hypothesis

Transboundary water management in the Limpopo Basin is an opportunity to understand regional integration in SADC.

1.5 Justification

The study enables the identification and explanation of principles, concepts and instruments in the Limpopo basin agreements and SADC regional water sector. This helps identify common and desired transboundary institutional arrangements, and the design and application of models for regional development with emphasis on water policy development. It would also highlight: critical assessment of the different functions of the water resources system and the, often competing, interests of the various water using sectors. These result in informed consultation, negotiation, mediation, decision-making and sustainable development - in Southern Africa's diplomacy and international economic relations.

1.6 Theoretical Framework

This research is an attempt at conceptualizing transboundary water management in regional integration using the Southern Africa Development Community from a study of the Limpopo Basin. It makes use of the theory of regional integration. States had built authority based on structures of the principle of territorialism yet theorists of regional integration such as Karl Deustch; Adler and Barnet; and Baylis and Renger recognized the role of inter-state co-operation in creating communities of regional integration (Ngoma, 2003:18-19). This study makes reference to the regional integration theory of functionalism which proposed to build a form of authority based on functions and needs, which linked authority with needs, scientific knowledge, expertise and technology (Mitrany, 1933:11). This facilitates a supra-territorial concept of authority entailing collective governance and interdependence

There are strong assumptions: firstly, that the process of integration takes place within a framework of human freedom; secondly, that knowledge and expertise are currently available to meet the needs for which the functional agencies are built; and thirdly, that states will not sabotage the process, (Laursen, 2008:4). This facilitates what Gudynas (2005:1) called "open regionalism," a process where explicit integration policies complement and are made compatible with policies that increase international competition. A complementary ingredient is reinforced by geographical proximity and cultural affinity within the region. It is portrayed in this research that there are hydrologically based water management institutions at international river basin level. In this perspective international agencies become part of development initiatives. Open regionalism carries with it tenets of outward orientation, market driven integration process, and private sector involvement.

Another regional integration principle is pragmatism or gradualism which indicates how, given differences in countries conditions integration may proceed realistically so as to build on demonstration cases and minimize the frequency of policy reversals. Closely, linked is the principle of subsidiarity stating that, "regional institutions should be responsible only for those activities that are not better handled at the national level. To avoid overloading already scarce sub regional administrative capacity and resources; and to assure that there is sufficient commitment and trust so that the key sub regional agencies will be given the authority and the means to implement the sub regional agenda"(Niekerk, 2008:3).

Regional integration can be defined in terms of three dimensions namely: geographic scope; substantive coverage and depth of integration. The geographic scope "illustrates the number of countries involved in an arrangement [with] membership being a political choice of any one country;" the substantive coverage or width involves the integrating "spill over" effect of "sector or activity coverage (trade, labour mobility, macro policies, sector policies)"; and depth of integration refers to "…how forms of cooperation may be characterized according to the scope of activities and loss of sovereignty…" (Niekerk, 2008:4). Evidently three key elements are crucial that is cooperation, harmonization or coordination and integration.

As a theory of regional integration, neo-functionalism whose proponents such as Niekerk (2008:4) aspires to be non-normative and tries to describe and explain the process of regional integration based on empirical data. Integration is regarded as an inevitable process, rather than a desirable state of affairs that could be introduced by the political or technocratic elites of the involved states societies. Functionalism approaches regional integration only as an incremental process. However, as shown in this research the conception of integration as a linear process cannot explain setbacks.

1.7 Literature Review

The river basin represents a unified hydrologic and geographic unit, which supports a holistic perspective on river basin management. All transboundary basins have agreements in various forms- bilateral; multilateral; basin-level; regional; and international agreements. In SADC the four most important basins are the Limpopo, Incomati, Maputo and Orange which are

shared with Botswana, Lesotho, Mozambique, Namibia, Swaziland and Zimbabwe which form a Hydro-Political Complex (Ashton and Turton, 2007:2).

River Basin Organisations (RBOs) have been promoted as the most appropriate means to manage water resources under some form of supranational authority. A configuration of hydro-political dynamics established on one hand a traditional paradigm dominated by state "sovereignty seen to be unbridgeable…national security as an all-pervasive and primary concern impacting on all decisions," among other issues, and on the other hand a converse proposition for a benefit sharing approach hammering on factors such as institutional architecture, harmonization of laws and "…national security is less pervasive because of confidence- building measures that institutionalize behaviour… the evolution of robust institutions that entrench confidence and attract foreign direct investment needed to integrate local economies into the regional and global economy" (Turton, 2008:5).

The SADC Treaty of 1992 provides for deeper economic integration on the basis of balance, equity and mutual benefit, providing for cross-border investment and trade, and freer movement, (SADC, 1992:1). It provides the institutional basis for cooperation and integration, and uses the approach which is based on project or sectoral coordination (Lee, 1999, Katerere et al 2001). It also allows for the establishment of protocols such as the SADC Protocol on Shared Watercourses. A Regional Strategic Indicative Plan was developed against a country-based coordination of sectoral activities and programmes as a more centralized approach through which 21 Coordinating Units were grouped into four Directorates (Nhara, 2003:2). These Directorates are the Trade, Industry, Finance and Investment; Infrastructure and Services; Food, Agriculture and Natural Resources; and the Social and Human Development and Special Programmes. The Water Division belongs to the Infrastructure and Services Directorate. The trial of project oriented cooperation in the past had revealed weaknesses in the functional integration model which were exposed by the fact that a project focus overshadowed the necessity to devise non-military mechanisms for conflict resolution (Moyo, Tevera in Turton, 2008:16). As a result, "SADC resolved to formulate and adopt effectively coordinated sectoral plans and policies and to develop a regional capacity in policy analysis and planning," (Turton, 2008:7).

SADC countries have great climate and temporal variability which makes planning difficult and has a direct impact on livelihood security for the population of the region. As economic growth progresses and population numbers increase several of the states in the region are

predicted to become "water stressed" by 2025 including the most developed economies (in terms of Gross Domestic Product) in the region, that is, South Africa, Namibia, Botswana and Zimbabwe (SADC, 2006:3). Rather, the question is not whether there is a shortage, but whether the supply is assured what the World Bank called 'hostage to hydrology,' after all water scarcity "can lead to a more rational policy away from the paradigm of national self-sufficiency, which in turn can stimulate the efforts being made towards greater regional integration within the framework of SADC" to gain the maximum benefit within the context of the regional economy; and between the regional economy and the global economy (Turton, 1997:3; 2008:2).

Recognizing the benefit of cooperative water management through institution building, the international community has promoted a legal framework for managing international waters. The history of development of global agreements governing transboundary water courses can be traced back to the 1911 Madrid Declaration on the International Regulation regarding the Use of International Watercourses for Purposes other than Navigation. This agreement outlined general principles for cooperative water management, such as establishing joint technical committees and avoiding unilateral developments. In 1966, the Helsinki Rules on the Uses of Waters of International Rivers further elaborated these principles and outlined factors determining what constitutes equitable utilization of shared water resources.

It took over twenty five years for the United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses (Watercourses Convention) to be adopted by the United Nations General Assembly on 21 May 1997 (United Nations, 1997:1), making it the only global treaty applicable to international waters. The Watercourses Convention reflects some of the challenges inherent in transboundary water management, that is, the conflicting interests of upstream and downstream users, and the challenges of addressing water allocation limits. However, the principles of "equitable use" and "avoiding appreciable harm" are both entrenched in Article 6 and 7 respectively within the Watercourses Convention. The Watercourses Convention attempted to strike a balance between the principles of absolute territorial sovereignty and absolute territorial integrity. Equitable and reasonable utilization can be considered to offer a compromise between the two contradictory principles. The Convention supports the approach of Integrated Water Resource Management (IWRM), which has been proposed under international water law in the Dublin Principles and Agenda 21 of the United Nations Conference on Environment and Development.

The Global Water Partnership (2009:2) identified sequential steps for basin management, including: outlining broad policy goals as a vision for water management; identifying specific water management issues and problems; evaluating potential solutions to resolve these issues; implementing the most appropriate strategies; evaluating the outcomes of implementing these strategies; integrating the lessons learned from evaluating the outcomes into future work. The Global Water Partnership (2009:7) proposes a framework for water management comprising three dimensions: the enabling environment, institutions and management.

Questions have been asked, as to whether, water is a cause for conflict or co-operation? (Van der Molen, Hildering, 2005:1). This is pertinent if one considers predictions by Serageldin, (1995 in Vidal, 2010:1) that water is going to be a future source of conflict just as oil is today and the fourth world war is going to be about water. In 2004, the UN identified the Limpopo—along with other nine river basins in Africa as being at risk of the onset of conflict, including the Okavango, Zambezi, Orange and Nile river basins. Petrie (2011: 9) counters that these "water war" scenarios, as they have been called by Star (1991:1), are historically not supported as "history reveals that water is not a reliable cause for interstate conflict posing that "between 1945 and 1999, water led to twice as many instances of cooperation than conflict between countries sharing a water source."

A closely related subject is the trajectory of sustainable development. This is more so as SADC tries to copy with global climatic change. Strategies adopted in the Limpopo River Basin transboundary water management are just a sector of the facets of an on-going attempt at integrating and developing SADC. Essentially, water is pertinent in the wider definition of security- that includes human and environmental security in international peace and security discourse (United Nations Development Programme, 1994:22).

1.8 Delimitations

A complete picture of the study would need to cover all the shared water basins in SADC, but this study will be limited to the Limpopo Basin. Water management is placed in a global village where international factors have to be considered. Boundaries can be within states but the focus of this study is with international boundaries (Muphree, 2000:2). Geophysics issues of hydrology, water quantity, water quality and ecosystems were not of major focus as this was restricted to two issues affecting regional integration, that is, governance and socio-economics. The research focus is on SADC's thrust for regional integration, peace, development and ecological sustainability. Concurrently an identification of actors involved

is necessary. Delimitation has been influenced by purposes of this study, resources, and geographical span of area to be studied. However, with the resources and experience provided by the International Water Management Institute most of the challenges were overcome.

1.9 Limitations

The research is intended to be a model for the understanding of transboundary water management in SADC. Its value for transboundary management of natural resources other than water can be inferred, although the nuances will predictably be different. However, by aiming for fundamental principles and searching for social facts the study can be useful even outside water management. It was not possible to visit the 14 countries of SADC and the four states in the Limpopo river basin hence the utilisation, as remedy, of embassies, international organisations, research institute, email correspondence and interviews at the 2011 Water Net conference in Maputo Mozambique.

1.10 Methodology

The main method of this study is an issues based approach. This is rooted in the United Nations Environment Program (UNEP-DHI) (2011:1-2) frameworks of: Driving forces- Pressures- State- Impacts- Responses. Data has been selected based on applicability and availability. Data applicability needed to satisfy relevance to transboundary issues in SADC including being relevant to other regions. Data availability had to fit the purposes of this dissertation and cost-effective to acquire. Indicators for governance issues are linked to governance architecture, river basin resilience and water legislation. Socio economic indicators are linked to economic interdependency, societal well-being and vulnerability.

The researcher triangulated the qualitative and quantitative methodologies. Data collection methods used where primary and secondary data gathering. Content analysis was applied to secondary data based on three levels which are: the SADC level, Limpopo Basin level and country level. Policy documents at all levels were analysed. A comparative analysis was made to observe trends, uniformity, consistency and variance at this level. The approach was to measure how much this had, in both theory and practice, contributed to regional integration in SADC. A similar perspective was adopted in determining the international dimension outside SADC using three case studies: one from Asia; the second from West Africa; and the third from Europe. Underpinning the study was a book or literature review, the internet and

academic research papers which were used as authoritative sources. Fieldwork was also necessary in the form of key informant interviews like the LIMCOM secretariat. Advantage was taken to make enquiries at the SADC WaterNet Conference held in Mozambique in October 2011 that had government representatives and researchers in water issues from across the globe as participants. Interviews were also carried out with donor agencies like the World Bank and European Union and research institutes like WaterNet and the International Water Management Institute (IWMI). It was also imperative to interview riparian states relevant government ministries and embassies where possible.

CHAPTER 2: TRANSBOUNDARY WATER MANAGEMENT IN SADC

2.1 Introduction

This chapter is concerned with describing international co-operation in transboundary water resources in SADC. It involves pointing out the cited rational and configuring the environment in which the co-operation takes place. Transboundary water management in SADC is an international process of interdependency incorporating governance, legal and policy responses in the development and security discourse. It identifies river basin organizations as actors in international affairs. The argument being presented is that the rational and implementation of transboundary water management limits the traditional role of the state thereby meaning that the theory and practice of transboundary water management essentially enhances regional integration. The effect of transboundary water management breaks the traditional role of the state and democratizes international relations. It also intends to prove that the stability of the region is critical to the success of its own transition.

2.2 Rational for SADC Transboundary Water Management

A synonym for transboundary water management might easily be regional integration defined as "any inter-state activity with less than universal participation designed to meet some commonly experienced need" (Haas, 1971:77). It seems transboundary water management in SADC results from the fact that virtually every country in the 14 member SADC organization, with the exception of the two island states- Madagascar and Mauritius, shares a major river basin with at least one other country. This might be the major source of interdependency which comprises of "sources, benefits, relative costs, and symmetry" (Nye, 1993: 161). Sources include transboundary ground water resources such as aquifers that provide a perennial source of water estimated at "27% of the water needs of urban communities in the region and 35% of the water needs of rural communities" (Molapo and Puyoo, 2002: 4). These hydrological factors coupled with serious spatial and temporal variability in the distribution of rainfall exacerbated by the uncertainties of climate change create a vicious water cycle inclining to interdependency. Five of the SADC states have "water resources dependency ratios of over 50% that is they rely on water generated outside their borders to supply more than half of their total water resource stock" (Malzebender and Earle, 2007:6). This shows that cooperation on transboundary water resources is necessary and crucial for the management and sustainability of water resources- it links the futures of basin states.

As if to confirm The Socialist International in the Frankfort Declaration of 1951 that the "system of unlimited national sovereignty must be overcome" (Shakhnazarov, 1981:204) the SADC water ecosystem overlaps administrative boundaries making it the interest of states to engage in ecosystem management which seeks to manage natural resources at the ecosystem level. This reflects the regional nature of Southern Africa's water resources and justifies the need for transboundary approaches such as "basin-wide agreements and joint management at the basin level (Katerere et al, 2001:4). Essentially, the resulting management of transboundary water resources is a social aspect relying on politics, technical operation and institutions that employ a philosophy of integrated water management (Savenije, van der Zaag, 2000:1). The SADC Regional Water Policy and Regional Water Strategy recognize the principle of integrated water resources management whose strategic objectives are to efficiency, equity and environmental sustainability (Global Water Partnership, 2005:1). The interdependency of nations has become "wider and deeper" as nations seek to secure their future through commitment to common responsibility and shared effort thereby increasing "the role of people and the shift of focus from states to people" (Ramphal in Mandela 1995: xiv).

Benefits of interdependency transboundary initiatives tend to promote economic growth and tourism. Caholo (2011: v) notes that 100 million people in SADC do not have access to clean water, and 155 million to sanitation when studies show that provision of these give a "3.7% economic growth rate." Transboundary Rivers in SADC are important to populations as virtual water for current and future water demands and dependencies. For example agriculture is the largest consumer of water in the region, using between "70 and 80 percent of available resources. Botswana and South Africa devote the lowest percentage of their water-use to agriculture- less than 60 percent," indicating that as the economies of the countries in the region become increasingly diversified (reliant on industry, mining, tourism among others) agricultural water use will be placed in competition with other sectors of the economy." (Food and Agriculture Organization, 2006:1). Adam Smith's (in Brow et al 532-534) international economic relations mentality, South Africa which used to produce most SADC cereals has resorted to importing as most SADC states emerge from political instability and are now starting to develop their commercial agriculture sectors. Mozambique increased cereal production from 250,000 tonnes in 1992 to 2,000,000 tonnes in 2005 (Food and Agriculture Organization, 2006:2). Also, since it is estimated that less than ten percent of

the regions hydro-power potential has been exploited hydro-power developments are expected to increase especially in the Democratic Republic of Congo, Zambia, Mozambique and Angola- and this can alter the stream flow characteristics of a river (SADC, 2005:1).

This cycle of dependence and interdependence can be located "within the larger context of globalism" (Keith, 1997: 21). Transboundary water management is part of a global trend emanating from the United Nations Convention on the Law of the Non-navigational Uses of International Watercourses which sets out the basic rights and obligations between States relating to the management of international watercourses (International Rivers and Lakes, 2009:1). This has been grafted into transboundary water management agreements.

Another causality factor is conflict, which is the nemesis of cooperation. It forms a "conflict-security-development" nexus that can be used as a basis for discussing the benefits of transboundary water cooperation both in terms of conflict prevention and in terms of outlining the 'costs of doing nothing' as opposed to 'the benefits of water cooperation' (Trondalen, 2011:1). An example can be the conflict potential of Mozambique and its upstream neighbours on the Zambezi River since "at least 50 percent of its land is drained by 8 international shared rivers [which is] 54 percent of all its surface water resources … increased upstream activities such as the proposed dams between Zambia and Zimbabwe will decrease the river's flow causing severe environmental degradation and salinisation of water supplies" (Katerere et al 2001: 3). A special situation pushing towards transboundary water management also arises when international boundaries are set on river systems. Relevant cases can be the Seduku/Kasikili Island dispute between Botswana and Namibia which was found to legally belong to Botswana by the International Court of Justice in December 1999; the Caprivi border dispute between Namibia and Botswana; dispute between South Africa and Namibia where it was agreed to re-locate the international boundary along the lower Orange River to the deepest channel of the river (Alexander 1999: 321). These situations call for conflict resolution and management between states in transboundary water management. Nevertheless, predictions on future wars over water have been argued not to apply to SADC as "instead water is perceived as an instrument for peace and stability" (Salamao, 2011: ii).

Therefore, perception in SADC transboundary river basin management is that it optimizes economic growth, political stability and regional integration. In this situation, described by Keohane and Nye in Crane and Amaw (1997: 107-109) as "complex interdependency,"

politics is transformed by interdependency. It appears the state's role changes as formal cross border arrangements result in greater state control and regulation although in reality the state would have surrendered part of its sovereignty to a supra-regional entity and the activity of non-state actors. Communities, civil society, the private sector, and academia all have a role to play in integrated water resources management. Subsequently, suitable governance, legislative and policy frameworks are needed to make this a reality. This milieu of factors provides the rational for efforts towards such frameworks in SADC.

2.3 From Bilateral to Multilateral Basin Wide Agreements

Transboundary water management in SADC begs the question on the role and future of the state as Boyer (2000:296) queried: "…will nation states continue to be important structures within the international economic system…." Between 1995 and 2012 water governance in SADC has changed " largely influenced by South Africa's changing role in the region [as] previously cooperation over shared water courses has happened mostly on a bilateral basis, often with South Africa being one of the two partners" (Ashton et al., 2006; Malzebender and Earle, www.acwr.co.za). It represents a movement from insecurity, force and survival during South Africa's destabilization of the region, to development of ties and contracts or put in another way, international organizations and international law. There has been a shift in integration from bilateral cooperation into regional and basin wide co-operation. It reflects various modes of diplomacy: "bilateral… multilateral… summitry… mediation diplomacy" being used (Berridge, 2005: 108-193).

A Kantian phenomena where states "form a confederation for a strictly limited purpose" is resulting in SADC as basin level bilateral agreements and organisations are being replaced by, basin- wide agreements and basin organisations involving basin states (Gallie 1980:25). Basin wide Commissions established for major rivers in the region are in 1991 Pangani Basin Water Board (PBWB) between Kenya and Tanzania; Permanent Okavango River Basin Water Commission (OKACOM) 1994 Angola, Botswana and Namibia; 1999 International Commission of Congo-Oubanqui-Sanqha (CICOS) between Cameroon, Central African Republic, Democratic Republic of Congo and the Republic of Congo; Inkomati Tripartite Permanent Technical Committee (2002) between South Africa, Mozambique and Swaziland; in 2000 the Orange-Senqu River Commission (ORASECOM) between Botswana, Lesotho, Namibia and South Africa; in 2008 Lake Tanganyika Authority (LTA) between Burundi, the Democratic Republic of Congo, Tanzania, and Zambia; in 2004 the Zambezi Watercourse

Commission (ZAMCOM) but still to be ratified; in 2008 the Ruvuma Joint Water Commission between Mozambique and Tanzania ; and the Limpopo watercourse Commission 2011 between Zimbabwe, South Africa, Mozambique and Botswana. This movement to basin wide governance systems mirrors a discussion by Krugman (1993:58) on whether "multilateralism" leads to "regionalism." Although not conclusively leading to regional integration, the multilateral agreements positively reflect growing regional integration and willingness to share state responsibility.

This change is in line with the SADC Treaty Article 22 which allows for protocols to define the nature of institutional arrangements for integration and cooperation (Evans et al, 1999:53). The SADC Treaty provides in Article 21 (3) for an approach to cooperation and integration that is project or sectoral based along seven areas of integration that are food security; land and agriculture; infrastructure and services; industry, trade, investment and finance; human resources development, science and technology; natural resources and environment; social welfare, information and culture; and politics, diplomacy, international relations, peace and security. This SADC functional integration model requires a harmonization of states domestic policies and plans with regional integration efforts. SADC's approach, that economic integration must precede political union maybe called "functionalism- the theory that co-operation in non-controversial areas leads to the acquisition of knowledge and skills which spill over to make co-operation in politically sensitive areas…" (Ojo, 1990:143). An example can be the Permanent Okavango River Basin Water Commission (OKACOM) which was signed as the OKACOM Agreement of 1994 by three sovereign states of Angola, Botswana and Namibia. OKACOM acts as technical advisor to these contracting parties. In 2007 OKACOM was aligned to the Revised SADC Protocol on Shared Watercourses and a new agreement the Organizational Structure for the Permanent Okavango River Basin Water Commission was signed in 2007 to establish the Secretariat. On a regional scale the institutional framework shown in Appendix A highlights that the SADC Water Division incorporates all water planning including transboundary water management in SADC.

2.4 The SADC Protocol on Shared Watercourses

The elaboration of laws is necessary whether integration is liberal or dirigist (coerced) (Balassa, 1961: 7-8). From an international law perspective the Revised SADC Protocol on Shared Water Courses of 2000 (enacted in 2004) is legally binding in SADC transboundary water resources management. It does not regulate the specifics of basin management but has

key elements of international water law such as integrated water resources management and makes mandatory for transboundary water resources management in the SADC. The Protocol in Article 6 provides for basin-wide agreements between riparian states for much more specific regulation. The objectives of river basin organisations proposed under Article 4 of the Revised Protocol are to: to develop a monitoring policy for shared watercourse systems; to promote the equitable utilization of shared watercourse systems; to formulate strategies for the development of shared water course systems; and to monitor the execution of integrated water resource development plans in shared watercourse systems. River basin organisations are responsible for harmonising national policies and legislation, conducting research and data gathering, managing water control and utilisation, promoting environmental protection measures, and promoting a hydro monitoring program.

Despite the development of the river basin organizations, the intransigence of the state can be shown by the fact that the Incomaputo-Agreement (Tripartite Interim Agreement Between the Republic of Mozambique and the Republic of South Africa and the Kingdom of Swaziland for cooperation on the protection and sustainable utilization of the water resources of the Incomati and Maputo Watercourses) "is currently the only one in the region that has advanced to a stage where it comprehensively covers basin management issues, ranging from water allocation between states, the development of water quality standards and information sharing requirements."(Malzebender, Earle, 2007:14). The Zambezi Watercourse Commission (ZAMCOM) formation has been through the Zambezi River Authority (ZRA) which is a bilateral arrangement between Zimbabwe and Zambia with a limited mandate necessary to support the Zambezi Water Commission (ZAMCOM) until established (Chenje, 2003:189-208).

2.4 The SADC Policy Framework

Anderson (1997:12) defines policy as a purposive course of action. Scholars such as Keohane (2002:2) identify themselves as "institutionalist's" replacing the decline of military force as a policy tool and heralding the ascendancy of economics and other forms of interdependency. SADC transboundary water policy framework is guided by the Regional Indicative Strategic Plan which seeks to operationalize the SADC Treaty on regional integration. The SADC Executive Secretary Tomaz Augusto Salamao commented that "Regional integration is critical for our region's development and the Regional Indicative Strategic Development Plan (RISDP) and the Strategic Development Plan for the Organ (SIPO) both outline the region's

objective of deepening regional integration"(Salamao, 2011:1). Some principles in SADC policy directives and/or experience with the implementation of the SADC Programme of Action include: implementing programmes that add value to regional integration, or enhance the capacity to achieve SADC objectives; broad participation and consultation; use of the decentralised management approach; adoption of the principle of subsidiarity, whereby all programmes and activities are undertaken at levels where they can be best handled; the maximum engagement of regional expertise and institutions; reduced development discrepancies by use of spatial development initiatives such as development corridors, growth triangles, growth centres and transfrontier conservation areas; and an allowance for variable geometry, where a group of Member States could move faster on certain activities and the experiences learnt replicated in other Member States- the basic principle being that programming should be contributing towards poverty eradication (RSAP, http://sadc.int/index/browse/page/112). Accordingly there has been the development of a Regional Strategic Action Plan (RSAP) on Integrated Water Resources Development and Management and specific programmes such as the SADC-Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) Transboundary Water Management Programme (TWMP), based on SADC's regional priorities as set out in the Regional Strategic Action Plan (RSAP), and on the implementation of the SADC Protocol on Shared Water Courses (Trondalen, 2011:3).

The Southern Africa (SADC) Vision for Water, Life and Environment (SADC 2000:1-38), namely for the equitable and sustainable utilisation of water for social and environmental justice, regional integration and economic benefit for present and future generations was adopted in 2000. The Vision guides long-term regional water policy and strategy. Water as a sector of SADC is guided by the SADC Regional Water Policy (RWP) and Regional Water Strategy (RWS) although they are non-binding, while the Regional Strategic Action Plan I (1999- 2004), Regional Strategic Action Plan 11 (2005-2010) and Regional Strategic Action Plan III (2011- 15) which will be discussed below point out the projects. Integrated Water Resources Management (IWRM) principles recognisd in these policies require open and transparent institutions, inclusive and participative decision-making, equitable access to the resource, and coherent and integrated policies (Global Water Partnership, 2005:2).

The Regional Water Policy (SADC, 2006:13) has nine thematic areas: regional cooperation in water resources management; water for development and poverty reduction; water for

environmental sustainability; security from water related disasters; water resources information and management; water resources development and management; regional water resource institutional framework; stakeholder participation and capacity building; financing water resources management in the region. The Regional Water Policy recognises the importance of regional cooperation; regional integration and the need to manage water resources in an integrated manner (Policy 3.1). It notes cooperation between all affected (water use) sectors (Policy 3.3). Policy 3.1 refers to the need for regional economic integration "on the basis of balance , equity and mutual benefit for all Member states" as water is an economic good that provides economic benefits (Policy 4.1.1,) and a social good essential to human dignity, poverty reduction and human well-being (Policy 4.1.2) if ecosystem integrity is to be achieved (5.1.2). Essentially the Regional Water Policy aims at achieving a sustainable balance between the development of the region's water resources for economic growth (Policy 1.1.1) and food security (Policy 4.3.1). The policy calls for the establishment of Shared Watercourse Institutions (SWCI) as set out in the SADC Protocol on each shared watercourse (Policy 9.2.8). In chapter 10 the policy deals exclusively with stakeholder participation and capacity building, stating that water resources management and development at all levels should be based on a participatory approach (Policy 10.1) and that stakeholders need to be empowered to effectively participate in such decision-making (Policy 10.1.2).

SADC states use this comprehensive policy framework to formulate water laws and policies in their national policy and legal framework. This policy harmonization is likely to ensure a coherent regional water resources management framework. It can be noted that a close relationship exists between SADC goals of integration and poverty reduction and the Regional Water Policy.

2.5 Regional Strategic Action Plans-IWRM

2.5.1 Regional Strategic Action Plan (1999-2004)

Brought into effect through an August 1998 SADC Summit the RSAP 1 was meant to lay the institutional basis for the execution of infrastructure projects and other related development initiatives. The RSAP 1 supported the implementation of 31 projects, falling into 7 broad categories: legal and regulatory framework; integrated basin wide approach; macro policies; knowledge management; public awareness; stakeholder participation; and infrastructure investment (RSAP 111, 2011:9). A 2004 review concluded that the RSAP 1 "was the most

advanced and comprehensive multi-country of freshwater programmes in the world" although it was criticised for being too broad necessitating the adoption of two paradigm shifts: changing from a project approach to a programme approach; changing the focus of the plan from the creation of an enabling environment to water infrastructure development (RSAP 111, 2011:9)

2.5.2 Regional Strategic Action Plan- IWRM II (2005- 2010)

It placed emphasis on infrastructure development and focused on about five strategic areas including: regional water resources development, planning and management; infrastructure development support; water governance and capacity building (RSAP II, 2005: 8). A 2009 review noted its successes as: development and approval of the Regional Water Policy; development and approval of the Regional Water Strategy; development of the Regional Awareness and Communications Strategy; procurement, distribution and installation of technology for real time collection of data; completion of Integrated Water Resources Management demonstration projects in 5 SADC countries; establishment and strengthening of several river basin organisations; development of guidelines to strengthen river basin organizations (RSAP III 2011: 11). Challenges noted under RSAP II where programmatic monitoring and evaluation; capacities within the Water Division and Member States; financial mobilisation, disbursement and management; progressing infrastructure beyond the planning phase; timely ratification of certain river basin organisation agreements (ibid). On review it can be noted that greater emphasis should was to be placed on a number of emerging issues, such as climate change adaptation, ecosystem approach and the human right based approach to water (RSAP III, 2011: 11).

2.5.3 Regional Strategic Action Plan-IWRM III (2011-2015)

In a near replica of Waltz's (1979:3) levels of analysis ranging from the individual, the state and systemic levels the conceptual framework of RSAP III is to strengthen the enabling environment for regional water resources governance, management and development through the application of IWRM at the regional, river basin, member state and community level. Its strategic areas are water governance; infrastructure development and water management and within each strategic area are three strategic objectives: capacity development; climate change and adaptation; and social development. It aims to reflect changes and improve impact of the RSAP (RSAP, 2011:42). It is critical to note the 15 programmes in this plan: river basin organisations; regional instruments; programme management support; common

and awareness raising; research and education; stakeholder participation; infrastructure project preparation; resource mobilisation for infrastructure development; infrastructure pilot projects; water supply and sanitation; ground water management and development; water economics; hydrology and basin management; environmental water management; and climate change adaptation (RSAP 111, 2011:43). This shows that the design of RSAP III uses a programmatic approach instead of a project orientation taking note of issues such as the river basin organisations approach as a fundamental component to implement Integrated Water Resources Management and variable geometry. The RSAP III budget is placed at 188 million Euros (RSAP III, 2011:46) and the sources of funding are expected to be national governments and international aid noted as "external resources."

2.6 Challenges in the Design and Implementation of Transboundary Water Management

The state is a feature of transboundary water management although it is "obstinate or obsolete" (Hoffman, 1974: 1). Probably the problem of state sovereignty remains proverbial in SADC transboundary water management but it would seem states have been willing to experiment with their sovereignty in establishing river basin organizations. Mearsheimer (2005:140) described this as idealist theory when "…states worry about the welfare of all people, not just their own citizens … and act ethically and respect international law as well." Mearsheimer (2005:140) goes on to contrast this to realists like Edward Hallet Carr who attack this as ignoring the role of power in international politics. Critically applied to transboundary water management and underlying question of governance which does not just refer to agreements and protocols or formal structures and processes of government but to the exercise of power in practice, from the global to the local scales, with questions on who has decision power, its exercise, the arrangements of power sharing, and how to hold decision makers accountable and with what implications (Wolmer 2003:12). Whilst SADC can follow the regional European Union model of an extensive array of institutions or more flexible less institutionalized approach "there have yet been any examples in modern history where regional organizations have ended the sovereignty of member states, [but] there is no doubt that they inevitably- as with any international regime- require that states agree to work within certain limits which may become progressively restrictive as institutionalization progresses" (Cawthra, 2007:26).

It is largely the capacity constraints of financial and human resources that inhibit transboundary water management in SADC. National governments contribute to SADC directly and/ or in-kind. For example, apart from providing facilities to river basin organizations they also carry administrative and operational costs; and SADC Member States contributed $23 million in 2008/2009 to SADC of which 8% was allocated to the Directorate of Infrastructure and Development to which the Water Division belongs (RSAP III: 46). When contrasted to the RSAP III budget of 188 million Euros the national contributions leave much to be needed. Aid from International Cooperating Partners is coordinated through the Water Strategy Reference Group in which the German government through The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) is a co-chair. In the RSAP II (2005-2010) International Cooperating Partners contributed 163 million euros- which means success of the RSAP III is hinged on external funding. The sustainability of such a course can be questioned if one notes the global financial crisis, already the Swedish government withdrew its support for the WaterNet/Wafsar Conferences which have been held 12 times with the last in Maputo, Mozambique 2011(the researcher attended the ceremony the Swedish government officially announced its withdrawal). The risk is that external support and private sector involvement maybe at odds with community and state interest hence at times it lacks legitimacy resulting in failed but expensive experiments (Katerere *et al*, 2001:23).

Aid as a development paradigm has been criticized left, right and center such that alternative development patterns must also be explored (Amin, 2011:159). This leads to questions on how much the transboundary water management agenda is owned by the SADC states. This is more so when the Orange- Senqu River Commission (ORASECOM) or Mekong River Commission is the only example of a River Basin Organization in SADC that is financially supported by the member states (Orange-Senqu River Awareness Kit, http://www.orangesenqurak.com). The ORASECOM was established by the governments of Botswana, Lesotho, Namibia and South Africa through the Agreement for the establishment of the Orange-Senqu Commission.

SADC transboundary water management does not exactly mirror international economic relations integration described by Spero (1996: 350) in which there is " the concentration of power in a small number of states, the existence of a cluster of interests shared by those states, and the presence of a dominant power willing and able to assume a leadership role." Leadership in transboundary water management is to be based on the voluntary collaboration

of Member States through bilateral and multilateral agreements. From a realist perspective this cannot guard against what Warner (2008:2) called "hydro- hegemony" especially with South Africa changing from being a regional foe into a friend. For instance the Lesotho Highlands Water Project (LHWP) Agreement between South Africa and Lesotho has been criticized for exporting Lesotho into scarcity while it also lacks the capacity to renegotiate the agreement (Mohamed- Katerere, 2001:21). However, one can note that, despite imagined or real perceptions about South African hegemony the hydrological peculiarities of SADC are more amenable to the interests of member states in transboundary water management. Also, with the demise of apartheid South Africa, South Africa's role in SADC has changed from being a thorn into a trade center. Therefore transboundary water management in SADC reveals a struggle to develop new patterns of post-colonial, continental and regional co-operative arrangements is in a real sense, an aspect of the struggle to institutionalize Pan-Africanism (Ojo, 1990: 144).

Ntalaja (1987: 73) argues that the "social question is at the very center of the present crisis of the state throughout the African continent… for it involves the states capacity for economic and social development, or its ability to raise the standard of living of the population." Notably, the 2015 end of RSAP III coincides with the Millennium Development Goals target year especially on goal 8: developing a global partnership for development; on goal 7: ensuring sustainable development; on goal 3: promoting gender equality and women; and on goal 1: ending poverty and hunger- although some scholars have been pessimistic about their attainment (Haines and Cassels, 2007: 394-397). SADC regional water management shows that it attempts to cover all issues from water per se to issues such as HIV/AIDS.

At a technical level a challenge could be on providing relevant water experts to man the institutions of transboundary water management. The presence of civil society organizations and academia is necessary. The WaterNet (2011:4) Integrated Water Resources Management graduate program which has produced 378 Masters degree graduates and other human resources training programs must be encouraged. Mass communication of this work can profit from the promotion of the Regional Awareness and Communication Strategy for the SADC Water Sector (2008:6) and the online International Cooperating Partners portal.

Another challenge is cooperation across water use sectors as well as integrating the governance frameworks for different natural resources as envisaged in Integrated Water

Resources Management. Also groundwater resources are excluded as the mandate of the existing Shared Watercourse Institutions is limited to the management of surface water resources. The challenge is to try to include the sector in the overall water resources governance framework. Such an inclusive approach could determine the fate of transboundary water management. It is in a way also implementing the wisdom of the African Peer Review Mechanism recommendations that "these processes will be most effective if they build on existing structures, rather than duplicating or creating parallel processes such that learning becomes cumulative" (APRM, 2003:12). This essentially means linking and making sure research makes an impact.

An understanding of SADC's transboundary water management in regional integration points out "that the study of regional integration is not the same as the study of regional cooperation [as the former] is concerned with explanations of how and why state cease to be wholly sovereign, how and why they voluntarily mingle, merge and mix with their neighbours so as to lose the factual attributes of sovereignty while acquiring new techniques for resolving conflict between themselves," whilst regional cooperation is the process to regional integration (Asante, 1997:20). If not the twilight of the nation-state the state in SADC is then challenged, in Todd's (1987: 76) terminology, by perforated sovereignties (bound to international law and organizations); powerless powers (states without the means); and surrogate powers (weak states acting on behalf of stronger states).

2.7 Conclusion

The role of the state in SADC transboundary water management is challenged although it remains dominant. This is largely due to various supranational commitments although nation-states are unsure about the implications. Also the due process as contained in the international law for management of transboundary resources is developing with nations still drafting it into their municipal law provisions of integrated water resources management. The resultant institutional, policy and legal frameworks have yet to have a major impact due to capacity limitations. The involvement of the international community through various organizations has sought to ameliorate these capacity hurdles by measures addressing financial and human resource needs. Although, mistrust somehow frustrates water management, it is the real issues of development and the transboundary nature of water resources that incline nations to regional integration. This means that apart from the mandatory imperative of basin

ecosystems, a scenario of complex interdependency results in regional and international politics becoming part of transboundary water management.

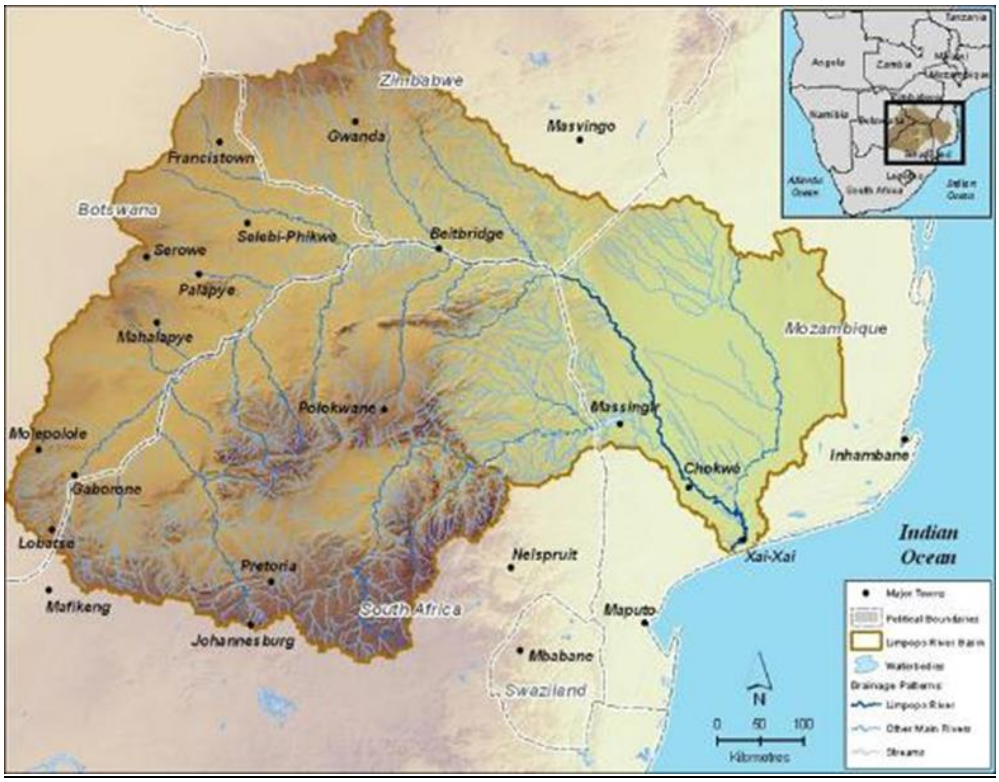
CHAPTER 3: LIMPOPO WATERCOURSE COMMISSION (LIMCOM): GROWING INTEGRATION?

3.1 INTRODUCTION

This chapter focuses on the Limpopo Watercourse Commission (LIMCOM). It looks at its formation, what it is, what it is supposed to do, what it has done, and what challenges it has faced. It uses the theories of decision making, negotiations and international political economy to note the development of regional integration through the river basin organisation. It observes the range of infrastructural, institutional and developmental advantages in the river basin organisation that make the region more attractive as the sum of its parts. This chapter seeks to establish the extent LIMCOM is an instrument for regional integration.

3.2 Geographic Scope

Fig.3.1. Map for the Limpopo River Basin



Source:Limpopo River Awareness Kit www.limpoporak.com (Accessed 12/02/12)

The neo-functionalist theory to regional integration postulated by Niekerk (2008:4) posits the variable of geographic scope as essential to its understanding. The Limpopo river basin shown in the map, in Fig 3.1, extends over 4 riparian states Botswana, Mozambique, South

Africa and Zimbabwe a drainage area of approximately 408 000 km² a phenomena called spill-over by Haas (1958:40)- forming a hydro-political complex in SADC. The Limpopo River starts from the confluence of the Marico and Crocodile Rivers in South Africa to the Indian Ocean at Xai Xai, in Mozambique. It forms the border between Botswana and South Africa, then the border between Zimbabwe and South Africa, before passing into Mozambique at Pafuri (Limpopo Basin Permanent Technical Committee (LBPTC, 2010: 2-3). The Limpopo River basin receives contributions from 24 individual tributaries - 13 on the left bank and 11 on the right bank. The Limpopo Basin Permanent Technical Committee Scoping Study proposes the delineation of 27 discrete sub-basins (Limpopo Basin Permanent Technical Committee, 2010:29). The Limpopo basin area in Botswana is 81 400km2 which is 20%; Mozambique 79 800km2 which is 20%; South Africa 184 150km2 which is 45%; and Zimbabwe 62 900km2 which is 15%- a total of 408 250km2 (Limpopo Basin Permanent Technical Committee, 2010:44).

3.2 Depth of integration

3.2.1Cooperation

As noted in Chapter 2 cooperation between states in transboundary water management has taken the form of agreements, initiatives, and institutions achieved at bilateral, multilateral, basin and regional levels. The Limpopo riparian states have also reproduced this hydro-political-economy in their international relations. Towards transboundary water management initiatives the Limpopo Watercourse Commission resembles an incremental process arising from "spill- over" referring "to a situation in which a given action, related to a specific goal, creates a situation in which the original goal can be assured only by taking further actions, which in turn create a further condition and a need for more action" (Lindberg, 1963:10). Starting with the 1983 Tripartite Permanent Technical Committee (TPTC) between Mozambique, South Africa and Swaziland it developed into the 1986 Agreement on the Limpopo Basin Permanent Technical Committee which established the Limpopo Basin Permanent Technical Committee (LBPTC) between Botswana, Mozambique, South Africa and Zimbabwe. In 1987 a Joint Permanent Technical Commission (JPTC) between Botswana and South Africa was established on the Limpopo, Molopo and Nossob Rivers. A Joint Permanent Commission for Co-operation (JPCC) was formed following the Joint Upper Limpopo Basin Study. This could be explained by a neo-functionalist approach to regional integration especially as it develops its own internal dynamic as states integrate in limited

functional, technological, and economic areas (Mitrany 1933:101). LBPTC was reactivated following political changes in South Africa in 1995 and was used in the dialogue and negotiation establishing the Limpopo Watercourse Commission (LIMCOM). However, in a South African Parliamentary Debate it was held that the "LBTC had met twice a year but Zimbabwe had not been able to attend all meetings due to the problems experienced in that country at the present" (Mmadintoki, 2007:1)- this was in reference to economic and political unrest in Zimbabwe. In 2005, together with the SADC Water Sector Unit, the LBPTC produced a LIMCOM Action Plan. In 2010, the Limpopo Basin Permanent Technical Committee conducted a comprehensive Joint Limpopo Basin Study which attempted to quantify the present and future water balance in the Limpopo River basin in each of the four co-basin states, and to plan future water resource development and management options so as to meet the future water demands in an optimal, sustainable and equitable way (Limpopo Basin Permanent Technical Committee, 2010: v). Cooperation was put in the functionalist process of spill over as components for achieving Integrated Water Resources Management in the Limpopo: component 1- agreed Limpopo Basin monograph (Baseline information); component 2- agreed development scenarios and potential; component 3 updating of knowledge base (there was need to create technical competence); and component 4- public awareness (Limpopo Basin Permanent Technical Committee, 2010: 57).

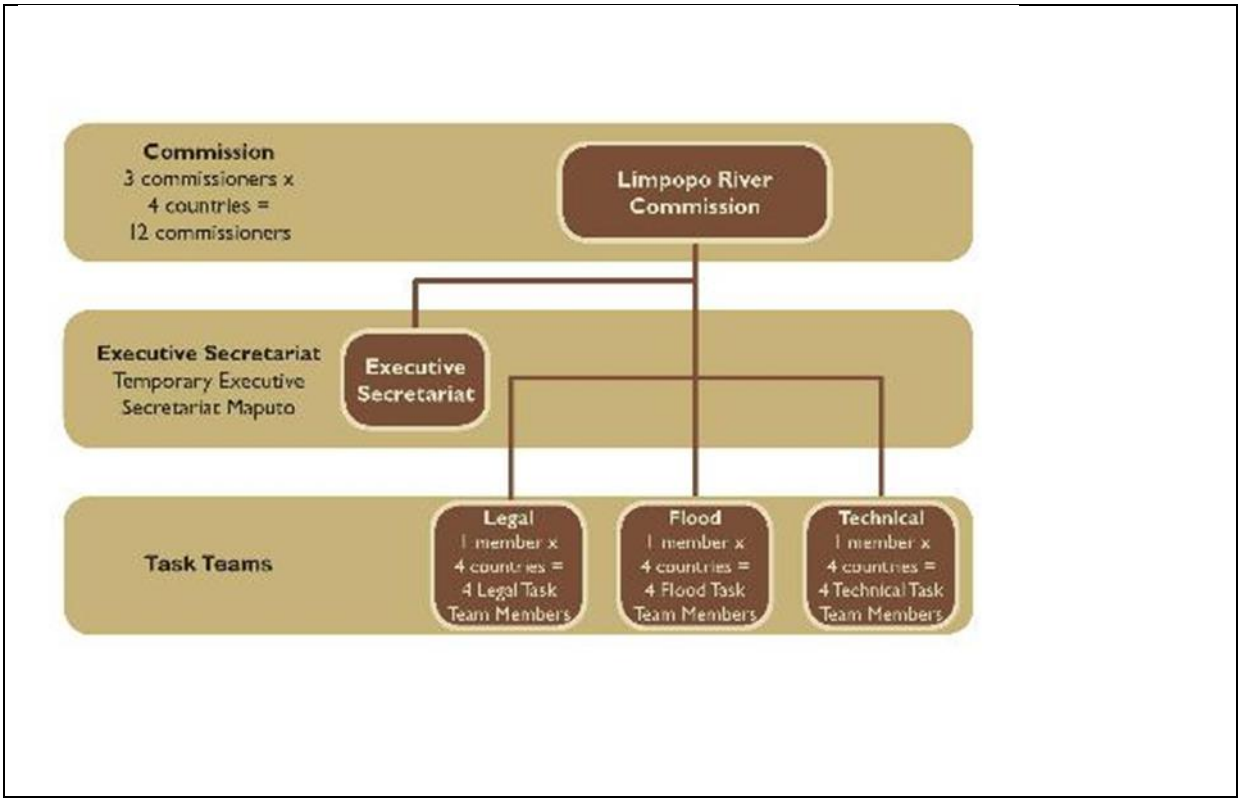
Other documents found by the researcher showing cooperation within the Limpopo Water Course Commission (LIMCOM) include: Assessment of Stakeholder Participation within the Limpopo River Basin; Economic Accounting of Water Use: Inception Report; Groundwater and Drought Management Project- Leaflet; Joint Limpopo River Basin Study- Scoping Phase; LoGo Water Leaflet; Mine Water Management in the Witwatersrand Gold Fields with special emphasis on Acid Mine Drainage; Regional Strategic Action Plan on Integrated Water Resources Management and Development (2011- 2015); Roadmap for Stakeholder Participation for the Limpopo Watercourse Commission LIMCOM ; and Support by International Cooperating Partners (ICPs) to the Transboundary (Regional) SADC Water Sector- ICP Mapping October 2011. Cooperation is also evident in the Limpopo River Awareness Kit (RAK) running as the website http://www.limpoporak.com which is an information and knowledge management tool for the Limpopo River Basin, to support capacity development and the sustainable management of the environment and resources within the basin.

3.2.2 Integration: LIMCOM Agreement

The Liberal inter-governmentalist school of regional integration postulates that Member States are unitary rational actors that are in control of the process of integration (Laursen, 2008:3). This is evident in the Agreement on the Establishment of the Limpopo Watercourse Commission between Botswana, South Africa, Zimbabwe and Mozambique which came into existence in 2003 recognising the SADC Revised Protocol on Shared Watercourses; the Convention on the Law of the Non-Navigational Uses of International Watercourses; and Chapter 18 of Agenda 21 of the United Nations Conference on Environment and Development (the Limpopo Agreement copy is attached as Appendix B).

The Limpopo watercourse is defined in Article 1 and Article 2 gives the Commission legal personality. Article 3 notes that "The Objectives of the Commission shall be to advise the Contracting Parties and provide recommendations on the uses of the Limpopo, its tributaries and its waters for purpose and measures of protection, preservation and management of the Limpopo."

Fig. 3.2 LIMCOM Organisational Chart



Source: Limpopo River Awareness Kit, www.limpoporak.com

In Article 4 institutional arrangements described in Fig. 3 the Council is the principal organ and a Secretariat to implement the Agreement. As the LIMCOM organisational chart in Fig 3.2 shows, the Council is the primary organ of LIMCOM. The Council consists of four delegations from each of the Limpopo River basin states. Each delegation consists of not more than three permanent members for a total overall membership of 12 members. In line with Article 4 a temporary Secretariat has been established in Maputo, Mozambique to prepare to implement the Agreement and a Legal, Flood and Technical Tasks teams will be established, each consisting of one member from each country. In Fig.3.3 below the researcher is pictured with the current Executive Secretary of the Commission in Mozambique.

Fig. 3.3 The researcher with current LIMCOM Executive Secretary Sergio Sitoe in Mozambique

Source: Photography taken during field work by researcher on 30 October 2011

Article 6 of the Limpopo Agreement sets meetings of Council as twice per year in ordinary session and as often as required in extraordinary sessions in rotation between the Contracting Parties. Article 7 describes Council functions as a technical advisor on matters related to the development, utilisation and conservation of the water resources of the Limpopo. Article 7

also gives the Council authority to ensure recommendation on any matter is contained in a report, including the costs, which shall be signed by each delegation. Article 8 empowers the Council to form working groups, appoint service providers and technical experts as required. Article 9 of the Agreement provides for settling disputes and stresses importance of negotiations. Parties may bring a dispute to the SADC Tribunal, if the parties have not been able to arrive at a settlement within six months after the start of negotiations and accept the decision of the Tribunal as final and binding. Article 10 sets the process of withdrawal and invalidating from the Agreement after three years from the date the Agreement enters into force with written notice to the other Contracting Parties. Article 11 describes financial arrangements: costs of attending and participating in the meetings of the Council and hosts of a Council meeting are responsible for the costs of holding a meeting while other costs are shared equally, unless otherwise agreed to by the Council. Article 12 contains the general and final provisions, including that once it enters into force, the Agreement will replace the previous Limpopo Basin Technical Committee Agreement signed in 1986. The ratification process was completed in May 2011 and the Agreement entered into force on 5 September 2011. In interviews with the LIMCOM Secretariat the four Member States are now in the process of formalising the Agreement, which is expected to be completed within the first half of 2012. Fig 3.4 displays the logo of LIMCOM with the four flags of the riparian states.

Fig 3.4 LIMCOM Logo: Source

Source: LIMCOM Website http://www.limcom.org/ (Accessed 12/02/12)

LIMCOM is currently developing its strategic framework and plan, which will guide future technical programmes and interventions in the Limpopo River Basin. Daily News Harare February 25 2010 reports a communiqué released following bilateral negotiations between Botswana and Zimbabwe, which asserted that transboundary water management was pursuant to Article 2 of the SADC Revised Protocol on Shared Watercourses "…to further co-operation for sustainable and coordinated management and utilisation of shared

watercourses" to benefit the two countries and to achieve "…regional integration and poverty alleviation." Zimbabwean Minister of Water Resources Development and Management Samuel Sipepa Nkomo (Daily News Harare, 2010 February 25) said "We agreed that there shall be investment co-operation with a view to encouraging joint ventures by institutions and citizens of both parties in the area of water development. Also, the agreement will enhance technical cooperation in areas of surface, groundwater, water quality and management of information with a view to strengthening current and future water resources management". This would also facilitate visits to water management projects and programmes of interest within each other's territories such as catchment and sub-catchments, councils and catchment management agencies. Evidently, these bilateral arrangements complement the integration that has taken the institutional choice which is LIMCOM.

3.2.3 Harmonisation/ Coordination

Various laws and policies would be found, after a review of various official documents, at the various levels of analysis: the regional, the river basin organisation; the state; and other intrastate locus. At the regional level policy is the Regional Water Policy, the law is the Revised SADC Protocol on Shared Watercourses, the United Nations Convention, other reference documents (Helsinki Rules, Dublin Principles, WSSD, NEPAD), and the Integrated Water Resources Management strategy is the Regional Water Strategy. Botswana law is Water Law [CAP 34:01] 1968 and policy is National Policy on Natural Resources Conservation and Development (EIA Act) 6 of 2005. South Africa has a National Water Policy of 1997; law is National Water Act, No. 36 1998; Integrated Water Resources Management strategy National Water Resources Strategy; and the National Environmental Management Act No. 107, 1998. Zimbabwe has various policy pronouncements; law is the Water Act [CAP 20:24] 1998, the Zimbabwe National Water Authority Act [CAP 20:25] 1998; Integrated Water Resources Management strategy is the Water Resources Management Strategy for Zimbabwe 2000; and the Environmental Management Act [CAP 20: 27] 2002. Mozambique water policy is guided by the National Water Policy 2001; law is the National Water Law, Law No. 16/91; Integrated Water Resources Management strategy is the National Water Resources Management Strategy 2007; and the Environmental Law, Lein 20/97.

Institutional framework in the Limpopo Basin states is as follows from the regional level: the council of ministers responsible for water at the regional level is the SADC Council of Ministers for Water and the LIMCOM, Limpopo Basin Permanent Technical Committee;

there is none for Botswana and South Africa; for Zimbabwe the National Water Steering Committee; and for Mozambique the National Water Council. The Ministry or Department responsible for water at the regional level is the SADC Directorate of Infrastructure and Services (specifically the Water Division); for Botswana the Department of Water Affairs (DWA); South Africa has the Department of Water and Environmental Affairs (DWEA); Zimbabwe the Department of Water Resources (DWT and ZINWA); and the National Directorate of Water (DNA). Intermediate hydro- water management at the regional level is done by the river basin organisations like LIMCOM; Botswana has none; South Africa has Water Management Areas; Zimbabwe has catchment managers; and Mozambique has Regional Administration for Water (ARASUL). In terms of stakeholder involvement the regional level has none; Botswana has a Water Apportionment Board; South Africa has Catchment Management Agencies; Zimbabwe has Catchment/ Sub-Catchment Councils; and Mozambique has Basin Committees. Some practitioners interviewed by the researcher argued that Zimbabwe has the most decentralised structures although they have not fully functioned as intended.

Historical institutionalist's see gaps emerging in the Member States' control of integration and attribute more importance to institutions (Laursen, 2008:9). The water authorities of the four countries currently have varying capacity both in terms of human and financial resources This requires focused capacity building in which the four countries can contribute in combination with external support something which the SADC Water Sector, as described in Chapter 2 above, is trying to resolve, although it is faced by many challenges. Substantial investment funds are required for the water resources management process and the necessary water infrastructure and stakeholder participation process is essential to enable implementation of guidelines and allocation of water resources use. Some of these gaps have been covered by bilateral agreements. In interviews conducted by the researcher it emerged that nations have at times opted to use bilateral agreements over these river basin organisations. An example given in one interview was that of the Orange-Senqu River Commission where it was realised that the Commission served more as a coordinator than development and implementation tool for transboundary water management resulting in countries formulating bilateral agreements.

3.3 Subsidiarity

In integrated water resources management as in regional integration subsidiarity refers to the lowest appropriate level. Rational choice institutionalists assume that actors have fixed preferences and that they behave instrumentally to maximize the attainment of preferences and note the importance community institutions in the grand bargains (Laursen, 2008:9). Those bargains were made by the member states. However, when it comes to implementing the bargains the community institutions are considered important. History making decisions are made at the supra-systemic level but communities are important at the systemic level of policy setting as well as assuring implementation (important in day to day running). SADC Water Division and LIMCOM coordinate, do surveillance and enforcement of decisions, while catchment levels implement. The choice of the appropriate level of detail and scale has been found to be very useful especially at the formation of the LIMCOM especially when one notes the Zambezi Water Commission and Lesotho Highlands Water Project where preparatory studies have taken many years to develop and agree on (Limpopo Basin Technical Committee, 2010: 26). It is therefore essential, when putting up the guidelines for the joint Limpopo river basin water resources management, to carefully assess which data, information and studies are necessary for the transboundary scale. Instead focus should be on border flow quantities and quality and on major activities that have or may have transboundary impacts. Focus should also be on establishing straight lines of communication in between key persons and institutions in the basin states. This could also underline the importance of developing sub-basins although there is a risk of over institutionalisation.

This should not be constructed as postulating the neglect of the state. Beach (2005:18-19) found state leadership to be required in international organisations negotiations, like LIMCOM, for two reasons: the first bargaining impediment in complex, multi-party negotiations is that parties can have difficulties in finding mutually acceptable, Pareto-efficient outcome owing to high bargaining costs; and the second bargaining impediment relates to coordination problems that can prevent the parties from agreeing upon an efficient agreement- even if there are low bargaining costs. As such the subsidiary principle can only be useful as an implementing tool but of little use in implementation.

3.4 Substantive Coverage.

The substantive coverage or width involves sector policies leading to two variables, on benefits and costs, which inescapably spill over national borders and necessitating shared commitment and collective action. Hoffman (1966:882) contrasts the logic of integration to the logic of diversity "it restricts the domain in which the logic of functional integration operates to the area of welfare… in areas of key importance to the national interest, nations prefer the certainty, or the self-controlled uncertainty, or self-controlled uncertainty, of national self-reliance, to the uncontrolled uncertainty" of integration. The necessity for transboundary water resources management is pushed by preferences in mutual benefits which can be benefits to the river; benefits from the river such as agriculture, hydropower, and secured urban supply. The challenge in this case is of optimisation and equitable sharing of these benefits; reducing the costs caused by the river through flood and drought through early warning systems; and benefits at regional level for integration of regional infrastructure and markets. Apparently, it seems transboundary water management is needed for equality and sustainability of water resources, the development of water-related infrastructure based on clear guidelines. Furthermore, mechanisms for exchange of data and information must be developed for compliance and for drought and flood emergency management. The joint management process will create an understanding of each other's challenges and prospects that will improve the possibilities to solve joint problems both for long-term development and emergency situations.

Opportunities and challenges in the Limpopo Basin include: semi-arid to arid conditions (scarce water resources) when it's used for domestic, livestock and subsistence agriculture purposes; loss of considerable volume flows into the sea which shows an opportunity for infrastructural development. Water users include urban and rural users. Cities covered are Gaborone, Pretoria, Johannesburg and Bulawayo. The large-scale utilisation of the tributaries for domestic and agricultural purposes, and mining and power production in South Africa is an example of how the water resources can be utilised to create economic growth and improve livelihood. Also preservation of protected environmental areas and water quality can improve and used to understand interaction or integration between groundwater and surface water. It helps increase understanding of the effects of climate change as global warming increases intensity of rainfall, and there is a 15% decrease of average rainfall (Limpopo Basin Permanent Technical Committee, 2010: 24- 25).

The Limpopo Basin includes large national parks that contain biota with several threatened species that contribute to the economies in the river basin through various ways such as tourism. Protected environmental areas comprise a very large part of the Limpopo River Basin. The Great Limpopo Transfrontier Park, comprising of the Kruger National Park in South Africa, the Limpopo National Park in Mozambique and the Gonarezhou National Park in Zimbabwe, takes up a very large part of the river catchment and borders both the Limpopo and Olifants Rivers.

The Limpopo Basin Study (Limpopo Basin Permanent Technical Committee, 2010: vi) notes that "the greatest user of water by sector in the Limpopo River riparian states is irrigation, which takes approximately 50% of the total water demand. In Botswana and Zimbabwe, however, urban supply is the major user. Total estimated demand is about 4,700Mm3/a. Almost two thirds of the demand is in South Africa, 30% in Zimbabwe, 6% in Mozambique and 2% in Botswana. Total runoff generated from rainfall is approximately 7,200Mm3/a showing that a significant portion of the runoff generated in the basin is currently used." Integration benefits water as it is a resource that has services which prosper from scale, competition and activities- consistency and credibility attached to it.

Projects running within the Limpopo Water Course Commission (LIMCOM) are: Transboundary Water Management (TWM) Programme in SADC commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ) in delegated cooperation with the UK Department for International Development (DFID) and the Australian Agency for International Development (AusAID) on behalf of the SADC Secretariat. The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) is implementing the partnership programme on Transboundary Water Management in SADC to strengthen individual, organisational and institutional capacities of the SADC Water Division, River Basin Organisations and national/local governments on transboundary water management. Other programmes include the Challenge Programme International Water Management Institute: Water and Food (MAEE/IRD)/Limpopo; LoGo Water Project (2005-2008); Preliminary study Sustainable Development and Management of Transboundary; River Basin Dialogue; SADC Groundwater and Drought Management Project; Southern Africa Water Wire; Sustainable Development and Management of Transboundary Aquifers in SADC.

3.5 Open Regionalism

Open regionalism is a concept that "seeks to assure that regional integration will in practice be building blocks for further global liberalization rather than stumbling blocks that deter such progress (Bergsten, 1997: 2). It therefore entails a greater involvement of international actors. There are a number of International Cooperating Partners working with the Limpopo Water Course Commission (LIMCOM). These include the Australian Agency for International Development (AusAID); Department for International Development (DFID); European Commission (EC); Institute de Recherché pour le Development (France); Japan International Cooperation Agency (JICA);United Nations Educational, Scientific and Cultural Organization (UNESCO); World Bank (WB) and the SADC Water Sector International Cooperating Partners Portal.

3.6 Political Level

The thrust of transboundary water management in the Limpopo basin is towards peace and prosperity. Unlike the realists perspective of seeking security through power it pushes for security through collaboration. Political and civic commitment can be questioned probably on the delay by Zimbabwe and South Africa to ratify the LIMCOM Agreement. This delay should be expected since these are the kind of scenarios regional integration efforts are meant to counter. Cognisance must be given to "the expansive logic of sector integration" applied to the European Economic Commission whereby it was held that liberalisation of trade in the within the customs union would lead to harmonisation of general economic policies and eventually spill-over into political areas and lead to the creation of some kind of political community (Haas, 1958:311). Political integration can be divided into " (1) the process whereby nations forgo the desire and ability to conduct foreign and key domestic policies independently of each other, seeking instead to make joint decisions or to delegate the decision-making process to new central organs. (2) the process whereby political actors in several distinct settings are persuaded to shift their expectations and political activities to a new centre" (Lindberg, 1963:6) It is apparent that LIMCOM focuses on issues of a hydrological or technical nature only, issues of low politics. This buttresses its sectoral focus as a functionalist regional integration model. Also, there can be observed that there is divided commitment, for example, when the Zimbabwean Parliament (2010:1-39) (as shown in the Hansard extract in Appendix C) ratified LIMCOM, it was part of a raft of treaties consummated in haste: "… a memorandum of understanding entered into with South Korea

last year on water supply and wastewater management policy and technology… the Zambezi Water Commission agreed… in 2004… the Limpopo Watercourse Commission and the loan agreement between Zimbabwe and the Export-Import Bank of China for the 3G national rollout programme." A problem of duplication of membership arises from commitment to LIMCOM and bilateral agreements. Mozambique and Zimbabwe are caught up in the Pungwe River Basin where they have put up a Joint Integrated Water Resources Management and Development Strategy (Government of Zimbabwe and Mozambique, 2006:1). LIMCOM Agreement underlines mutual trust among the countries in the preamble "mindful of the importance to extend and consolidate the existing tradition of good neighbourliness and close cooperation between the contracting parties" (LIMCOM, 2003).

3.7 Economic Plane

Regional integration is generally accepted as a stepping stone to wider global economic involvement competitiveness and offers a better global market access at a lower cost, due to improved economies of scale (Mbeki, 2000:). The economic benefit of LIMCOM appear, judging from the ratification Parliamentarian debate in South Africa, that it covers a market of approximately 14 million people, the flexible sharing of data, infrastructure development and transboundary water development and transboundary water management (Mmadintoki, 2007:1). Direct benefits include impacting dams, stream flow and helping forecast droughts and floods. This essentially assists in mitigating the effects of natural disasters especially in flood prone Mozambique. Members of LIMCOM are also members of SADC and COMESA which creates a problem of dual membership. Best practices and standardisation. However, the state's ability to support transboundary water management can be questioned on the basis of small domestic markets, combined with generally high production costs and deficient investment climates such that generally "Africa attracts less than 2% of global foreign direct investment" (Niekerk, 2008:1). Probably LIMCOM has a better potential than individual states to attract international capital since it aspires to internationally acclaimed standards and bargaining from collective positions make the sourcing of funds efficient.

3.8 Pragmatism

The Limpopo Agreement has been in existence for ten years in 2012 illustrating how the organisation has grown out of a voluntary, recommendation and cooperative approach far from compulsion in order to retain the consent of member states. The gradual development of LIMCOM fits into what Laursen (2008:3) notes as liberal Intergovernmentalism- a regional

integration theory proposed by Andrew Moravcsik's on "grand bargains" that are said to move in three phases: national preference formation; interstate bargaining; and institutional choice. The first stage concerns national preference formation whether economic or geopolitical interests. Second stage involves interstate bargaining for example the LIMCOM negotiations. Two possible explanations of agreements on substance are: asymmetrical interdependence or supranational entrepreneurship. Asymmetrical interdependence has most explanatory power as state cooperation and integration are at the centre of its formation. It would seem that LIMCOM is more of a product of supranational entrepreneurship when one notes the involvement of technocrats and water experts (Moravscik, 1998:63). The third stage, institutional choice, explores the reasons why states choose to delegate or pool decision making in international institutions. LIMCOM as an institutional choice is a rational strategy adopted by the member states to pre-commit governments to future decisions, to encourage future cooperation and to improve future implementation (Moravcsik, 1998:73).

3.9 Challenge Program on Water and Food

The researcher also had a chance to visit Umzingwane Catchment area in August 2011 of the Limpopo Basin under the Challenge Program on Water and Food where observation revealed the water scarcity and underdevelopment of the area. The CPWF vision is to help develop more prosperous and resilient agricultural societies by improving access to water, and the ways in which it is managed and used. Between 2010 and 2013 the CPWF facilitates five projects in the Limpopo Basin under an initiative called Limpopo Basin Development Challenge: Limpopo Project 1: targeting and scaling out; Limpopo Project 2: small water infrastructure; Limpopo Project 3: farm systems and risk management; Limpopo Project 4: water governance for enhanced livelihoods in the Limpopo Basin; and, Limpopo Project 5: learning for innovation and adaptive management (CPWF, 2011:2-6). The researcher was part of Project 4 and visited various irrigation and water management sites. At one centre, the Kezi irrigation scheme it was the donations of the European Union that had helped setup the irrigation site. The importance of such an initiative, as the Limpopo Basin Development Challenge, is that it involves a number of institutes in different countries for example: University of the Witwatersrand, University of Kwazulu Natal, University of Zimbabwe, Rural District Council Insiza, and Rural District Council Gwanda amongst many others. This is an example of grounding the theory of regional integration with the pursuit of development in mind. However, a complaint raised by the Insiza Rural District Council was that the

research conducted under the Limpopo Basin Development Challenge needs to improve on feedback, impact, and practical implementation.

3.10 Conclusion

Evidently transboundary water management in the form of LIMCOM is a tool for regional integration in SADC. The extent of that utility is a function of a progression in spill-over effects as cooperation grows into integration and integration is implemented for practical uses. The development of baseline information through the Limpopo Basin Study and LIMCOM is a critical step in defining the factors and process of integration. The challenge of LIMCOM is that it is still in its formative stages, although now at advanced levels. The secretariat and technical issues are scarcely responsible for the success and failure of both SADC and LIMCOM as they are only as strong as their constituent members. It would seem LIMCOM is still on the periphery of state interest and subservient to other state priorities. However, the lack of resources and political will, actually appear to be stronger impediments. LIMCOM's true value is futuristic although its current processes of institutionalisation, policy and legislative formulation are critical ingredients in growing integration.

CHAPTER 4: International River Basin Organisations: Comparative International Perspectives

4.1 Introduction

This chapter analyses international river basin organisations to draw lessons for Southern African Development Community transboundary water resources management and to characterise the general nature of international river basin organisations in regional integration. In this chapter three river basin organisations are used as a window into this phenomenon. These are: the Permanent Commission of the Indus in Asia; the Niger Basin Authority in the Economic Community of West African States (ECOWAS); and the International Commission for the Protection of the River Elbe in the European Union (EU).

4.2 The World's International River Basin Organisations

A physical tally by this researcher of international river basin organisations contained in a data base compiled from a research by Bakker (2006:89) and updated by Oregon State University lists a total of 203 international river basin organisations. These are distributed as commissions, organisations, organisation and economic programme, committee and forming organisations some that are still at draft stage.

Fig 4.1 Tabular Presentation of the Distribution of International River Basin Organisations at Continental Variation.

Organisation	Commission	Organisation and Economic Program	Committee	Forming	Region
8	28	-	-	1	South America
6	22	13	1	1	Africa
1	21	-	-	3	Asia
1	56	-	-	3	Europe
10	36	-	-	-	North America
26	168	13	2	4	203

Source: Data from Oregon State University www.transboundarywaters.orst.edu. Accessed 15/01/2012

Fig. 4 is a tabular tool developed by the researcher from data assembled by Oregon State University. The presentation of data in this format makes it easily comprehensible. South America has eight organisations and twenty eighty commissions to make a total of thirty six international river basin organisations. Africa has thirteen organisations and economic programmes, six organisations, twenty commissions' and one committee which make's a total of thirty seven international river basin organisations. Asia has twenty one commissions, one organisation, one forming, and one committee to make a total of twenty four international river basin organisations. Europe has fifty six commissions, three drafts and one organisation to make a total of sixty river basin organisations. North America has thirty six commissions and ten organisations which makes a total of forty international river basin organisations.

This data reveals that SADC has at its disposal a wide array of initiatives it can copy or innovate from. Nations seem to favour commissions over any other form of transboundary waters institution. Bakker (2006: 89) had charged that the use of the terms commission and organisation was subjective and a mere way of classifying the literature such that she went on to use the term "international river basin institutions." This nomenclature has not affected the selection of case studies used in this chapter. Africa is the only region with international river basin organisations as economic programmes as well. This may reflect the emphasis on development in the region. Europe's sixty institutions are a reflection of its solid uniform policies under the European Union especially considering its Water Framework Directive that binds member states to river basin management. However, this paper drew case studies on three river basin organisations of which the choice of organisations has largely been influenced by uniqueness of the case study, applicability of data to SADC and availability of data.

4.3 The Permanent Commission of the Indus

Regional integration in Asia is argued to be based on the conduct of India and China chiefly because of their unique size (Wang 2006:1). The Environment Development Fund and the Challenge Programme for Water and Food (2012:28) note "that India is the largest freshwater user in the world and the country's total water use is greater than any other continent". The Indus basin is home to more than a quarter of a billion people, with some of the lowest human-development indicators in the world (Mustafa, 2010:2). It has been argued that regional integration in Asia proceeds more as a market or sectoral based phenomena than as a policy driven or institutional phenomena (Wang, 2006:4). Probably this could be illustrated

more on the Permanent Commission of the Indus which implements the Indus Water Treaty of 1960 signed between India and Pakistan which assigned the waters of the eastern tributaries of the Indus to India and the western tributaries to Pakistan. China and Afghanistan who are upper riparian states were not included in this agreement.

Gulhart (1973: 93) observes how David Lilienthal former Chairman of the Tennessee Valley Authority and of the United States Atomic Energy Commission proposed to the World Bank a solution to diplomatic impasse and imminent war over Kashmir between India and Pakistani by negotiation. Kliot *et al* (2001:242) submit that the conflict was an international customary law argument with Pakistan (Muslims) claiming historical rights and "equitable apportionment;" while India (Hindus) claimed prior use or preservation of status quo. Article XI of the Indus Water Treaty expressly states that the parties did not intend to establish any general principle of law or any precedent but the practice and implementation of the Treaty, which points to some important principles of international law. India gave up its upper stream sovereignty and belief that it could utilize the resources of the upper tributaries however it wishes. The Indus Treaty also applied the principle of equitable apportionment of water in that basin. The legal solution for the Indus seemed to also rest on the adequate financing of storage and diversion projects with the bank contributing credit lines. Kares (2010:8) thought that the treaty did not capture industrial water use and mining effects; did not address water quality; did not account for climatic changes; and China and Afghanistan who were left out could increasingly assert their rights to the Indus Waters Treaty (because it is strictly bilateral)- such that it could require renegotiation. There were attempts in 2002 of rescinding the treaty altogether because of cross-border terrorism, particularly the attack on the Indian parliament in December 2001, and the ensuing mobilisation of the two countries armed forces These two antagonists realised that the treaty's benefits outweighed its faults.

Despite these setbacks the Indus Water Treaty advanced institutional provisions which expressly permit and necessitate some joint cooperation. The Article VIII of the treaty formed the Permanent Indus Commission comprising Commissioners from each country serving as representatives for all matters relating to the treaty and are required to meet at least once a year or more frequently at the request of either commissioner. The Commissioners also inspected the entirety of the basin once every five years. Kares (2010:8) notes that since 2008, the Commission has met regularly for the preceding forty five years for a total of ninety three times. Although the treaty includes disclosure requirements for most of the river

projects, this extra layer of oversight serves a very important role in ensuring transparency for both parties.

The Permanent Indus Commission has a low level of cooperation mainly in the exchange of hydrological data, and to ascertain and approve any works on the river. Mustafa (2010:7) observes that the Indus Basin is a secretive organisation because the two countries media (which is highly diverse and vocal electronic press), becomes highly emotive and inflames public opinion on water issues. Mustafa (2010:7) argues that Pakistanis suspicions about Indian intentions are further accentuated by the fact that India in general holds stream-flow data as a state secret and that there is a very little possibility to independently verify the data. In an attempt to diffuse the atmosphere of mistrust between the provinces in 2004 the Indus River System Authority (IRSA) which is the main water management body in Pakistan, installed a satellite-based telemetry system on the Indus basin rivers to provide real time flow data to all provincial water managers (Kliot *et al*, 2001:242). One can note the need to widen the issue from purely engineering concerns to wider social, cultural, environmental and equity – and justice- related concerns on water resource.

Kares (2010:5) points out that political divisiveness extends beyond the borders of the two nations, with international actors also playing a role in political hostilities. Political tension in the region arises from colonial Britain's partitioning scheme of India and Pakistan along religious lines which was geographically arbitrary resulting in divisions into irrigation districts. Russia, United Kingdom and the United States have all extended political conflict to the realm of the super-powers. In the Cold War Pakistan allied with the United States whilst India was part of the Non-Aligned Movement, friendly to the Soviet Union. The Commission still functioned even after the acquisition of nuclear weapons by these belligerents. The canals constructed under the Indus Treaty also became defensive infrastructure with more overt security implications, for example armoured vehicles movement was restricted in the 1965 India-Pakistan war (Mustafa, 2010:8). Furthering, the security complex are subnational hydropolitics which have for example in India led to separatist insurgency and unrest in Pakistan's Punjab.

Article IX of the treaty prescribes a neutral expert and court arbitration in case of unresolved disputes amongst the commission. The expert is appointed by the two countries or the World Bank. The Court of arbitration is selected from disparate actors as the United Nations, the President of Massachusetts Institute of Technology (MIT), and the Lord Chief Justice of

England. This dispute resolution system is not hierarchical but is linear since it only complements and is a diplomatic broker to achieve transparency, fairness, and equity. The implied prerequisite necessary for such measures is the ability of both parties to compromise sovereign. In 2007 a neutral expert was appointed to help the countries reach a mutual conflict resolution.

The resilience of the Permanent Indus Commission was tested during periods of political tension, for example, in the 1965 war, the commission continued to meet and execute successful management decisions despite the on-going war; during the 1971 war (which lasted until 1975) political relations between the countries deteriorated significantly with Pakistan severing all relations. Despite the diplomatic breakdown the Permanent Indian Commission continued to work through its agenda including two tours of inspection and the exchange of monitoring data. During this political stalemate, the commission was essentially the only aspect of cooperation between the two countries

Kliot *et al* (2001:241) argues that the Commission functions as a coordinating supervisory body ensuring that parties develop their water shares exactly as stipulated. As such the river basin organisation maybe considered a suboptimal solution to the management of the dispute on how its water will be utilised and allocated. The dispute was solved by the involvement of a Third party- the World Bank. The Indus Water Treaty was an outcome of the partition of the Indian sub-continent. Mustafa (2010:1) used this case study against assumptions about the inevitability of water conflict finding the threat to be, the lack of transparency sharing between India and Pakistan and the trust deficit between them. An accord signed in 1991 suffered a crisis of legitimacy because the negotiating process leading up to the accord was not transparent and did not include all stakeholders. Notably, the treaty is a product of its time and could be fruitfully modified and renegotiated to bring it more in line with contemporary international watercourse law, the Helsinki Rules, and emerging concerns with water quality, environmental sustainability, climate change, and principles of equitable sharing.

This case study reveals positive lessons for SADC such as transparency; territorial access; resilient dispute resolution; adequate funding; context specific framework and third party involvement. Avoidance of such practices as basin partitioning; bilateral treaties; lack of comprehensiveness and treaty misuses is also implied. LIMCOM can learn from this historical legacy of commission operation in as much as it is not the ideal of cooperative management, because it highlights the importance of some general principles of basin

management such as transparency, equitable dispute resolution, relaxed sovereignty and appropriate financing among others.

4.4 Niger Basin Authority

This case study provides an essential critique to regional integration as to whether it is the path to prosperity. It portrays the challenge of integrating Africa into the world economy. For SADC this case study also shows the challenges of managing regional security and consensus. The Niger Basin Authority is part of the regional organisation, the Economic Community of West African States (ECOWAS). The importance of the Niger Basin Authority can probably be understood from the regional functioning of the Economic Community of West African States. The Environmental Development Fund and the Challenge Programme for Water and Food (2012:6) note that the "overall aim for the Economic Community of West African States is enabling development at the regional scale through the organisation of a common market and the interconnection of infrastructures." The Commission of the Economic Community of West African States also develops specific policy frameworks for priority sectors like water, energy and agriculture. Because of the important proportion of water resources that are transboundary, for instance the Niger, Gambia, Senegal and Volta- the Commission of ECOWAS has developed a specific Water Resources Coordination Centre, to ensure the coordination of regional and national sectoral policies for what concerns water resources.

The Niger Basin Authority was first established as the Niger River Commission which lasted from 1964 to 1979. Niger Basin Authority nations are Guinea, Mali, Niger, Chad, Burkina Faso, Ivory Coast, Nigeria, Benin and Cameroon. Seven of the nine riparian's in the Niger basin were members of the defunct Niger Commission. All nine riparian's are members in the Niger Basin Authority. However, the failure of the Niger River Commission makes evident that a good organisation is not always sufficient for successful functioning. The cooperation in the Niger's basin has evolved since 1963 when seven of the nine riparian's signed the Act of Niamey.

The Niger River Commission invited non-governmental organisations and United Nations affiliated organs in order to obtain the financial support needed for its development plan. The funds were raised and technical assistance was received but did not improve the organisations poor performance. The failure of the Niger Commission and its replacement by the Niger

Basin Authority could be found in the composition of its seven member states which did not share a common interest in the joint development of that basin. The Niger Commission structure had a secretariat; technical committee of experts and a council of Ministers. In 1980 this structure was transformed and an upper level of the Summit of Heads of State was added to improve the performance of that body but this did not help. Technical and financial support on the commission had been received from the African Commission for Technical Cooperation; World Bank; United Nations Development Programme; Canadian International Development Agency (CIDA); United States Agency for International Development (USAID); and the Food and Agriculture Organisation. Despite external support the institute failed because of divergent interests between the parties.

Kone (2012:17) notes that one of the lessons learnt is that there is need to document the best scientific knowledge about the competition between food, electricity production and biodiversity and translation of this information into understandable materials for different target groups (ministries, Niger Assembly, National Basin Authority, local and regional decision makers, rice farmers, herders and fishers). Global Environment Fund (2010:1) points out a request by the Niger Basin Authority for a bail out from the United Nations Development Programme and World Bank. The national policies of all basin state countries were self-centred with divergent interests and contextualised in Poverty Reduction Strategies; World Bank Country Assistance Strategies; United Nations Development Program Country Programs (Global Environmental Fund, 2010:8). The request indicated that there were a number of donor supported national level initiatives, which have often occurred in isolation and thereby foregone any cumulative benefits. Subsequently focus was put on regional strategy and national polices as part of a Strategic Shared Vision and Sustainable Development Action Plan for the Niger River Basin.

Global Environmental Fund (2010:19) noted the following: need for capacity building of transboundary environmental management at the community, national and regional levels; data management; building on national water resource projects and initiatives already supported by the United Nations Development Programme and the World Bank; setting in place strong participatory processes, which will involve communities, local authorities, scientific institutions and non-governmental organisations in the management of the common transboundary resources; and designing a common vision which will lay the technical, policy and institutional foundation for future cooperative projects and programs. This would reflect both the Millennium Development Goal's and the New Partnership for African Development

(NEPAD) goals especially Millennium Development Goal number seven promoting integrating the principles of sustainable development into country policies to reverse the loss of environmental resources. It would also promote water quality and quantity. The 1980 convention assigned the Niger Basin Authority, the central governing institution for the Niger River to promote cooperation among the member countries and to ensure integrated development in all fields through development of its resources, notably in the fields of energy, water resources, agriculture, forestry, transport and communication, and industry.

Critically, interdependence over the Niger has not only generated tension, but has also led to a dialogue and cooperation process. Examples of conflicts have been upstream- downstream conflict between Burkina Faso and Ghana; border uncertainties' between Benin and Niger over Lete Island eventually referred to the International Court of Justice; and the river migration conflict in 1994 between Cameroon and Nigeria brought their dispute before the International Court of Justice in 2002 which ruled in favour of Cameroon in December 2003. This desire for peaceful settlement may be linked to the prospects of joint development on the river.

However, the transboundary nature of the Niger basin (covering nine sovereign states) does not easily lend itself to joint management arrangements in which each member state can clearly identify benefits more significantly than those it can obtain by acting unilaterally or formulating collaboration agreements at a smaller scale. Bilateral cooperation agreements have been used to cover those gaps left by the river basin organisation. Examples are between Niger and Benin 1999 on hydroelectricity; Nigeria and Niger on the equitable sharing, conservation of their resources in common waters; hydroecological management project of the Upper Niger between Guinea and Mali; the Nigeria- Cameroon Protocol Agreement 2000 supervised by Niger Basin Authority. ECOWAS *et al* (2006:15) is of the view that these bilateral arrangements "highlight the relevance of the subsidiarity principle more than they challenge that of basin organisations," and subsidiarity is at the core of the concerns of the permanent Forum for the Coordination and Monitoring of the Integrated Management of Water Resources in West Africa (CPCS- GIRE) created in 2001 under the auspices of ECOWAS. The objective of CPCS- GIRE is to promote and facilitate the creation of consultative frameworks for riparian countries of shared water resources. The CPCS-GIRE Program is coordinated by the ECOWAS Water Resource Coordination Unit (WRCU) based in Ouagadougou, Burkina Faso, and operating since 2004. The West African Water Partnership GWP/WAWP was established in 2002 with the Global Water Partnership which

is a regional platform for dialogue and consultations to promote the integrated management of water within river basins (ECOWAS *et al*, 2006:15). The African Network of Basin Organisations (ANBO) was established in July 2002. Initially designed to group the basin organisations of West Africa (West African Basin Organisation/ RAOB), it was subsequently extended to all basin organisations in Africa.)

It seems the tensions between users and riparian's really complicate the regional integration objective in ECOWAS. The importance of the subsidiarity and gradualist principle is more evident here, since rushing the construction of institutions even with the funds is detrimental to successful cooperation. Apparently, consensus building is a sine que non to regional integration. Regional integration can only lead to prosperity if it moves with all the stakeholders and when international capital respects the necessity for indigenous ownership of the regional integration agenda.

4.5 International Commission for the Protection of the Elbe

This case study is unique in that for the Southern Africa Development Community there is illustrated a model for transforming a war torn zone and collective security into peace building. At first it was called the International Commission of the Elbe, established in terms of the Treaty of Versailles and lasted from 1919 to 1936. Its members were Czechoslovakia, Germany, France and Germany. It was responsible for the freedom of navigation and customs transit ports. During World War Two the whole Elbe was occupied by Germany. However, the internationalised regime of the Elbe was not resumed after World War Two. The Cold War and Iron Curtain prevented the resumption of the international regime leaving the Elbe under regulation and supervision by the two German states.

The International Commission for the Protection of the River Elbe was realised in 1990. Its members are Germany, the Czech Republic and the European Union. Raasgever (2005:1) observes that the source of Elbe is in the Czech Republic and about two thirds of the basin is in Germany and a negligible part of the basin is in Austria and Poland. The biggest cities are Berlin, Hamburg and Prague. The Commissions functions are to clean the Elbe water for drinking, irrigation, and restoration of ecosystems. It recommends to the Environment Ministers of the member states which have to implement and as a result implementation is slow. The structure of this organisation is exceptional in that, in addition to the riparian's in the basin, Germany and the Czech Republic, the European Union is also a partner and a

signatory to the international treaty of the International Commission for the Protection of the River Elbe signed in 1990. Poland and Austria have observer status. The Southern Africa Development Community can also be a signatory and partner to the agreements in its region to guarantee that the regional agenda is met. For example, it could have been a signatory to the Limpopo Watercourse Agreement. However, it may be noted that this was only possible in the Elbe after the fall of the communist regimes in Eastern Europe, and the probable lure of the nations by the monetary benefits that accrue from European Union membership.

Whilst the first commission was limited to water quality management the current commission also has a working group on flood management. Raasgever (2005:2) notes that implementation is slow due to lack of finances and that the most obvious difference in perception of water management between Germany and Czech Republic originate from upstream-downstream differences and from the institutional and economic difference between the former Eastern and Western Europe. The more downstream parts of the river in Germany are confronted with pollution from the more upstream parts in the Czech Republic.

According to the United Nations Economic Commission for Europe (2007:189) the Elbe River is engaged in measures to achieve the objectives of the European Union's Water Framework Directive. Belka (2007: iii) believes that transboundary waters play a significant role in the United Nations Economic Commission for Europe region since of the fifty six countries in the region, all but the three island states share water resources with one or more other countries. As such transboundary basins link populations of different countries making them a major source of income for millions of people. This creates hydrological, social and economic interdependencies between countries. Kauppi (2007: iv) argues that the first assessment of transboundary waters by the United Nations Economic Commission for Europe answers the priority needs of transboundary water management, particularly in countries with economies in transition. SADC can use such assessments to its benefit, and the Limpopo Basin monograph mentioned in Chapter Three is one such tool, and must be continued even when LIMCOM is fully functional. These assessments could serve as reference points for governments, international river basin organisations (joint bodies), other international organisations and relevant non-governmental organisations to improve the status of transboundary waters and agree on joint measures related to Integrated Water Resources Management (United Nations Economic Commission for Europe, 2007:2).

European Environmental Bureau (2010:2) argues that the adoption of the European Union Water Framework Directive in 2000 was a major land mark which established new requirements for integrated river basin planning in order to achieve ecological objectives. However, Heise *et al* (2010:57) assert that Humburg was unable to meet the Water Framework Directive due to its downstream nature, a large city of 1.7 million inhabitants and activity at the port. The assessment by the United Nations Economic Commission for Europe (2007:120) found: a lack of transparency and robust assessments; unending delays in ending eutrophication (excessive nutrients); well-trodden paths but without reform as ten years of planning and consultation across Europe went into River Basin Management Plans, which were meant to be the main vehicles for realising the new water management regime by the setting of environmental objectives.

In such stagnation non-governmental organisations can also take the open regionalism platform advice from the European Environmental Bureau (2010:7) to use legal avenues more intensively to uphold the minimum requirements of the Water Framework Directive. In particular national courts should be called upon to condemn illegal practices in river basin management plans opening the way for their review and improvement. They could work more closely with the competent authorities, not always the river basin authority, but the finance, agriculture or transport ministry or a chemicals safety agency instead. They can as well focus on tangible results, which can change the course of individual development projects, introduce toxic bans, restore wetlands and increase buffer zones and have the power to create political will for reforms.

Raasgever (2005:4) advocates for what he calls adaptive management which became part of the European Union legislation. He observed different types of legislative instruments in the European Union: regulations are binding and directly applicable in all member states; decisions are binding, but directed only to a specific member or other party; recommendations and options are not only binding; directives are binding only to the result to be achieved by the member states to which they are addressed, but not to the means to reach these results. The Water Framework Directive uses the geographic and hydrological unit for the management organisations instead of administrative or political boundaries. If member states share a river basin, they are obliged to establish an international basin district and if a basin is shared with non-member states, the member state should try to establish coordination to achieve the objectives of the Water Framework Directive. The framework would require new spatial and temporal scales of policy development and implementation and public

participation. The welfare states of SADC can also note, to take or leave, how new policy must be consistent with the multitude of existing law, which helps to make water management and policy transparent. Raasgever (2005:5) notes that national laws have complied with the requirements of all European Union legislation and introduced modern financing mechanisms that follow the "polluter pays" and "user pays principle" with cost being recovered to the state budget.

Therefore, a summary of this case study shows that transboundary cooperation on the Elbe has been triggered by transboundary problems. In the 1920's, it was acknowledged that the construction of any hydraulic works can influence upstream and downstream interests, and therefore has to be agreed upon by all riparian countries. After the political barrier between the communists and capitalists was resolved in 1990 the International Commission for the Protection of the River Elbe was established to combat the pollution in an international context. The devastating floods of the 1990's and 2002 triggered political and general attention to flood management and also to transboundary cooperation in flood management. Finally the accession of the Czech Republic to the European Union in 2004 resulted in the legal obligation to cooperate with Germany for the implementation of the Water Framework Directive. Evidently, a strong regional organisation can ensure sufficient incentive and guarantee to antagonists after a war situation in a case where transboundary water management is able to begin cooperation and peace building under collective security.

4.6 Annotating Lessons

Global Water Partnership (2012: B1.02) lists lessons that can be learnt from an analysis of international river basin organisations among them that "once established, transboundary organisations and water agreements are remarkably robust" which category fits the Indus Permanent Commission, the Niger Basin Authority and the International Commission for the Protection of the River Elbe. In these river basin organisations it is shown that they often act as a moderating factor within a conflict situation- as brokers and negotiators to build confidence. Evidently, the establishment of conditions for agreement can be time consuming and costly in terms of money and resources. International financial support can indeed be helpful in transboundary water management. Multilateral agencies such as the United Nations Development Programme and World Bank have both fulfilled these roles, of financier and mediator, in the Niger and Indus respectively. The European Union has guaranteed peace and finances for the Elbe. As noted in the Elbe and Niger national water policy to support inter-agency co-ordination for the transboundary organisation and needed to be modified to align

with the other parties to the agreement otherwise transboundary water management was not sustainable necessitating rearrangement. Apparently, citizens, media and non-governmental organisations pressure can galvanise action that impacts water management. As noted, once established, transboundary water management needs to move beyond visions, and develop specific regulatory mechanisms, data and information sharing instruments, and financing mechanisms to put transboundary water management firmly on the ground. This wealth of experience shows that technical secretariats are essential in this respect.

In many ways these lessons affirm the applicability of Cleary's (2000: 90) Southern Africa's regional integration "action agenda" that includes: developing bureaucratic, managerial, technical and entrepreneurial skills to ensure better use of scarce human, financial and natural resources. The dissolution of the Niger River Commission shows how limited capital resources can be effectively used through regional rather than national planning. The Elbe's joining of the European Union and integration into the world economy shows how an enabling environment attracts Foreign Direct Investments. The Indus Permanent Basin Commission mainly illustrates a regional security management framework with a stress on preventative diplomacy, conflict management and conflict resolution, peace building and cooperation. As a sum these river basin organisations are showing that regional economic integration should be progressive and regional capacity should be based on principles of competitive advantage.

4.7 Conclusion

The Southern Africa Development Community (SADC) can benefit from transboundary water management as entailing institutions must differ in type and function in response to political context, cultural features, and the challenges posed by the water resources. Their basis is voluntary agreement amongst sovereign states usually as international water authorities and commissions. Although these organisations are set up for a particular purpose their ambit usually expands in the basin with time. Although at times the agreements are of an informal nature some are formal international treaties and agreements. Its ingredients, which would also apply to LIMCOM, are: solid funding, the political will of governments, and the commitment of the partners who create them. An Integrated Water Resources Management approach requires that human resources and institutional capacity in transboundary structures are able to address technical aspects, social issues, as well as environmental and economic development imperatives. Essentially parties need to build and

accept common data sets and knowledge about the water resource issues and share visions about the future of the resource. All these concerns push forward the regional integration agenda, as well as peace and development goals.

Chapter 5: Conclusions and Recommendations

5.1 Conclusions

This research has made it apparent that transboundary water management is a sector approach in SADC regional integration. This has been because transboundary water management in SADC as seen through the Limpopo Basin and the Limpopo Agreement of 2003 represents a struggle between determinism and voluntarism. Determinism is created by the interdependence resulting from shared international rivers and voluntarism manifests as state sovereignty and management principles such as Integrated Water Resources Management. The Limpopo basin is a region of intense water scarcity and variability such that this makes this dichotomy more acute. Groundwater resources are also to be fully understood and utilized. The Limpopo Watercourse Commission of 2003 represents a trend in SADC transboundary water management as member states move from bilateral to multilateral agreements. This phenomenon of integrated river basin management is taking the form of river basin organisations with secretariats. Like most international organisations, these bodies operate more on the basis of consent, recommendation and cooperation rather than compulsion and enforcement. A corollary is the use of bilateral agreements by parties involved in river basin organisations to resolve certain specifically localized issues. This has meant that transboundary water management has become both a foreign policy and domestic policy issue. States have subsequently moved towards water policy, institution and legal harmonisation to further their common interests although whenever they are at variance states have asserted their right to self- determination.

This trend has also resulted from a deliberate promotion of the regional integration and cooperative agenda through the SADC Water Division, the SADC Protocol on Shared Watercourses and the Regional Indicative Strategic Plans. This shows political commitment on the side of member states. It is also apparent that the SADC member states commitment is limited by the under-development that characterises the region. This development paradigm is sufficiently captured in the SADC Treaty and the establishment of the four secretarial Directorates of which the Water Division belongs to the Infrastructure and Services Directorate.

SADC has recognised the principle of subsidiarity by giving itself a coordinating role and encouraging nation-states to cooperate. It has provided a platform for such international dialogue as when it acts as an appellate division in LIMCOM disputes. This is done with the

understanding that water resources are better managed at their appropriate levels: regional; basin; national; and catchment council levels. It appears this is also an effect of a gradual approach to integration grounded in its functionalist regional integration.

Consequently, the regional integration in SADC has had to bank on international capital. Funding has come through various organisations such as the Global Water Partnership. These have been grafted into SADC mainstream Secretariat as auxiliary and ex-officio members. International capital is also tied to certain standards that it promotes, particularly as principles of integrated water resources management codified in various international agreements such as the United Nations International Convention on Shared Watercourses, the Dublin Principles and Agenda 21. Both the SADC Protocol on Shared Watercourses and the Limpopo Watercourse Agreement make reference to these documents and principles. These principles place emphasis on stakeholder participation, equitable utilisation and protection of water resources. The whole point seems to be sustainable development.

Evidently, the comparative international experiences showed that the provision of funds and addressing technical issues is not enough since there are socio-economic, cultural and political factors that must be taken into account. The full realisation of LIMCOM has to carry with it stakeholder participation otherwise it will experience the false starts experienced by the Niger River Commission and the International Commission of the River Elbe.

This research shows that transboundary water management requires research and technical expertise. The Limpopo Basin monograph needs to be constantly updated and that requires a lot of funds and capable human resources. Research makes available common data sets which can be used by negotiators of these multilateral agreements. Capital and knowledge have the effect of integrating countries by requiring member states to work together. Internationally financed research institutes such as WaterNet and the International Water Management Institute have sprouted in SADC. Paradoxically, the impact of this research is negligible as it has not reached decision makers resulting in expensive projects that have not been successful. Apparently, this has been the core to the problem for indigenous ownership of the processes involved, since governments feel like events are just happening on them- at a time nationalist element is strong particularly in Zimbabwe. This is pertinent in that it shows a mere repetition of international platitudes when context specific scenario's might require radical approaches.

It has also been shown that water acts more as a cooperative than divisive element. The strategic value of water for regional peace and security is mainly a character of its cross-

border and scarce nature. Whilst, water might not cause outright war it is of paramount importance in pursuit of human and environmental security. Transboundary water management is also shown as a continuation of politics by other means since hydropolitical factors must be considered. Water management has been linked to democracy and human rights, concepts which only thrive in a peaceful environment especially under Regional Strategic Action Plans. Regional peace has facilitated the growth of transboundary water management which has subsequently reinforced the peace. In a way transboundary water management is a peace building tool. This research concludes that SADC's belief that interaction in transboundary water management could lead to deepened regional integration is a well-founded premise.

5. 2 Recommendations

It is recommended that SADC and LIMCOM member states must seek to function more in the international river basin institutes that they have set up through various international agreements. Use of bilateral agreements should be kept at a minimal, as multilateral agreements are much more useful in promoting regional integration. To avert an out of context regurgitation of international pronouncements, context specific transboundary water management must be developed. This can be achieved by availing research to decision makers at various levels. Politicians and policy makers should be encouraged to involve relevant experts in their discussions. This synergy can offer responses that capture regional realities and nuances. Research must subsequently be reduced to practical action points that are not complicated and too technical. A conscientisation of the benefits of transboundary water management with its potential for regional integration through: geographical propinquity; cultural and political homogeneity, or at least like-mindedness; economic and infrastructural integration; and common and related security concerns. It is recommended that this could also be achieved by greater sharing of information.

It is recommended that transboundary water management need not necessarily be against the state. The perforated sovereignty of the state in SADC should not lead to a premature redundancy. The growing process of transfrontier cooperation can be left to a gradual and pragmatic course that would not be alarmist. Rather than being a threat to state's right to self-determination, transboundary water management should partner the state in furthering the interests of development.

The development of necessary human resources with expertise is a priority in this regard. The promotion of specific water management related training is imperative. It is perhaps necessary to finish the inclusion of WaterNet and its graduate training program as a subsidiary to SADC. These water experts could be useful in supporting line ministries in member states and transboundary water management. The role of non-governmental organisations and research institutes could be handy in highlighting transboundary water management issues such as climate change. This could extend to the exploitation of groundwater which has not yet been exploited. Apparently the technological march with the use of satellite equipment such as Geographic Information Systems (GIS) is useful. These can be advanced into the policy framework.

All this would benefit from strengthening partnerships with international organisations such as the Word Bank and SADC-Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), under open regionalism. These bring to the table financial resources and great experience. Also, they can act as brokers and mediators when there is conflict. Simultaneously this should not undermine local ownership and participation of stakeholders, since their exclusion can easily result in artificial and weak regional integration. It is also recommended that SADC should itself act as a guarantor and partner in the various agreements in the region. The European model exhibited in the International Commission for the Protection of the River Elbe is an example to learn from.

Concurrent reforms can be made on cost effective management practices based on market factors. The principles of cost recovery would help finance transboundary water management and make it self- reliant. This could act as a compliment to the weaknesses of developmental aid as a sustainable development strategy in global economics. Transboundary water pollution can also be curbed using the polluter pays principle.

It is recommended that transboundary water management thrives from adaptive management structures, clear and flexible criteria for water allocations and quality, the equitable distribution of benefits and detailed conflict resolution mechanisms. This holistic approach will grow and create a virtuous circle of stability and prosperity and investors will have faith in governments and their policies since transboundary water management, as that of the LIMCOM affects other issues like foreign direct investment, economic growth, tourism, trade and sustainable development. Regional integration through transboundary water management

can assist in this aim by committing governments to transparency, accountable and limited governments, and to broadly the same macro-economic policy direction.

However, transboundary water management as part of this process will on its own not ensure growth and stability (critical to effective regional integration) because SADC member states have to grow cooperation amongst themselves and economic development in their countries. Growth and stability have in turn, to come from a change in policy, particularly in a movement towards policies that promote river basin management and strong economies. Here SADC and LIMCOM can play an important role in securing and maintaining a commitment to best practices and stability from which greater regional co-operation and thus global integration can grow.

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