WORKING PAPER 112

Indigenous and Institutional Profile: Limpopo River Basin

Anton Earle, Jaqui Goldin, Rose Machiridza
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International Water Management Institute

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Acronyms and Abbreviations

AWIRU	African Water Issues Research Unit, University of Pretoria
BSAC	British South Africa Company
CC	Catchment Council
CGIAR	Consultative Group on International Agricultural Research
CMA	Catchment Management Agency
DNA	Direcção Nacional de Águas (National Directorate of Water)
DWAF	Department of Water Affairs and Forestry
FRELIMO	Mozambique Liberation Front
GWP	Global Water Partnership
ICM	Integrated Catchment Management
IFPRI	International Food Policy Research Institute
IIASA	International Institute for Applied Systems Analysis
INERA	Institut de l'environnement et de recherches agricoles (Environmental and Agricultural Research Institute)
INGC	Instituto Nacional de Gestão de Calamidades
IWMI	International Water Management Institute
IWRM	Integrated Water Resource Management
MoA	Ministry of Agriculture
OAU	Organization of African Unity
OFS	Orange Free State
RAU	Reforma Administrativa Ultramarina
RDC	Rural District Council
RENAMO	Mozambique National Resistance
SADC	Southern African Development Community
SATAC	Southern Africa Technical Advisory Committee
SCC	Sub-Catchment Council
TAC	Technical Advisory Committee
WAB	Water Apportionment Board
WMA	Water Management Area
ZAR	Zuid-Afrikaanse Republiek
ZINWA	Zimbabwe National Water Authority

Foreword

This Working Paper reports on research carried out in the Limpopo River Basin, by the research team in that basin implementing Project number 47, supported by the Challenge Program on Water and Food. The Project title is "Transboundary Water Governance for Agricultural and Economic Growth and Improved Livelihoods in the Limpopo and Volta basins: Towards African Indigenous Models of Governance." A companion Working Paper (Opoku-Ankomah et al. 2006) is being produced reporting on similar work in the Volta River Basin.

In sub-Saharan Africa, there are some 63 transboundary river basins, i.e., basins shared by two or more countries. Development and management of the resources in these basins requires cooperation among the riparian countries; and institutional arrangements are needed as a mechanism for such cooperation. The question is thus, not whether transboundary water management in Africa should be strengthened, but rather how. In part, the knowledge needed can be derived from experiences in developed countries and Asia. However, there are at least three reasons why Africa must be cautious in copying the transboundary experience of others. First, in general, water scarcity in sub-Saharan Africa is primarily 'economic' water scarcity; i.e., it is not lack of water but the lack of financial and human resources and poor governance that are the key issues. This implies that the win-win option of capacity building for new resource development should receive higher priority than the division of scarce resources among competing users, as is often the case elsewhere. Second, sub-Saharan Africa is overwhelmingly poor, and there is an extreme dependence upon access to water for rural livelihoods, particularly for the poor and women, groups that tend not to be strongly represented in decision-making bodies at an international scale. Third, indigenous arrangements in the management of natural resources, in particular land and water, continue to be very important in Africa, a point invariably neglected in international agreements and indeed in "modern" national water laws.

So how can transboundary institutions be built which address sub-Saharan Africa's unique conditions? This project on African Models of Transboundary River Basin Governance *hypothesizes* that through an indigenous African "bottom-up" approach, starting from local traditions and social arrangements, it will be possible to create more resilient and successful transboundary water institutions than would otherwise be possible, while also giving greater voice to the poor, women and men alike, in the process. In order to tackle this problem, the project began with an assessment of the current institutional arrangements from an historical perspective. This is largely a literature review, using published and unpublished sources. The present Working Paper reports on the results of this historical hydro-political assessment of the Limpopo River Basin. The second phase of the project is currently (2005-2006) supporting groups of postgraduate students who are doing detailed case study field work in rural areas in order to identify potential local traditions and social arrangements that could possibly be built into the design of larger-scale river basins.

The African Models of Transboundary River Basin Governance project involves a direct partnership among two CGIAR centers (IWMI and the International Food Policy Research Institute, IFPRI), several national research partners, and government water management institutions (including the Water Resources Commission of Ghana, Department of Water Affairs of South Africa), and one advanced research institute (Center for Development Research, University of Bonn). In the Volta Basin, the national research partners are the Institut de l'environnement et de recherches agricoles (Environmental and Agricultural Research Institute, INERA, Burkina Faso) and the Water Research Institute, Ghana. In the Limpopo Basin, the formal national research partners are the Department of Soil Science and Agricultural Engineering, University of Zimbabwe and the African Water Issues Research Unit (AWIRU), University of Pretoria, South Africa. In addition Waternet, a regional consortium of universities promoting integrated water resources management is involved. The project has also benefited from an association with the University of Eduardo Mondlane, Mozambique.

IWMI and its partners are grateful to the Challenge Program on Water and Food for its support.

Douglas J. Merrey
Project Leader
March 2006

Summary

This paper presents an overview of water-related governance structures and institutions in the Limpopo Basin. The Basin is of critical socio-economic importance to the 14 million people distributed across the four riparian states of Botswana, Mozambique, South Africa and Zimbabwe. Urban centers, mostly in Botswana and South Africa, are major water users supplying industries, power stations and municipalities. Water is also used in rural areas for domestic, livestock watering and irrigation purposes. While irrigated agricultural activities are largely concentrated in South Africa and Zimbabwe, the majority of rural populations engage in rain-fed agriculture, which does not guarantee secure livelihoods. This is due, in large part, to the region's semi-arid climate where only two out of every five agricultural seasons produce reasonable crop yields. These climatic conditions emphasize the need for effective management of transboundary water resources and effective governance structures, delivery and control mechanisms. Appropriate institutional frameworks and governance structures have a pivotal role in defining the socio-economic situation of the people in the Basin.

This project attempts to assess the potential of indigenous institutions to contribute to effective water governance as an integral part of the pluralistic legal system of water management. This is significant because people in the Basin and throughout Africa, despite being governed by statutory law and formal institutions, are still influenced by systems that pre-date statutory law. In some cases, these systems operate independently or alongside statutory laws. By providing a sketch of the hydropolitical history of the basin, this paper presents background material as a prelude to field research that is being undertaken in the second phase of the project. The material that is presented here is, therefore, largely based on secondary data sources, including sources from academic literature in history, archaeology, anthropology, etc., as well as public sources. These data were analyzed in relation to the key objectives of the study.

The paper begins by defining two recurring important concepts: *indigenous* and *institutions.* Institutions are herein understood as regularized patterns of behavior that emerge from underlying structures, which may refer to a set of rules or organizations that may encompass legally constructed and informal rules and regulations (Leach et al. 1997; Berry 1989; cf. North 1990; Folke and Colding 2001; Nemarundwe 2003). The paper endorses Nemarundwe's (2003) contention that it is often difficult to separate institutions from the structures or organizations that ensure that the institutions are adhered to, and it is, therefore, best to study them together. 'Indigenous people' are used in anthropology to describe a non-dominant group in a delineated territory with a more or less acknowledged claim to aboriginality. Indigenous institutions can therefore be defined as rules, norms and their enforcement of **rural** groupings whose livelihoods are predominantly based on **small-scale agriculture** (cropping, livestock, fisheries, hunting/gathering); whose socio-political cohesion is based on a **sense of ethnicity** and not only residence, and for whom **tribal authority or local self-governing institutions** play a role in some or many domains of life, over and above 'modern' local government and state-induced or private water management institutions.

The evolution of indigenous governance structures and their interface with statutory frameworks is analyzed in terms of the socio-political history that is specific to each of the riparian states, given their unique experiences. Data show that the Limpopo Basin is predominantly inhabited by people speaking languages of the Bantu linguistic family. An analysis of the language and population groups in the four basin countries shows that some groups were found across nation-state boundaries and that different ethnic groups were also found to be living in the same locality. There were also similarities across the basin countries in the way that institutions associated with rain-making ceremonies were structured. Despite the similarities, the profile concludes that local nuances are significant, and should not be underestimated, because the four nation states to which these groups now belong have experienced very different historic developments. These developments have tended to cause substantial differences between the groups and their traditional governance regimes. It is hypothesized that social interactions between different ethnic groups within the same geographical locality shaped water management practices and traditional governance structures. In other words, practices originally shared by groups with similar historic origin have taken different directions, depending on the socio-political systems the groups have experienced. This remains an interesting line of enquiry, as is the possibility of similarities within the same ethnic group in different nation states, especially if some level of interaction was maintained or the groups were in contiguous localities.

The profile also highlights potential risks due to phenomena such as climatic change that has the potential to jeopardize water-dependent activities such as agriculture. Exposure to different types of risk raises the question of variance in types of responses that local/indigenous populations have adapted to environmental changes, both in the short and long term, and considers the way in which these adaptations vary across both micro-environments and within localities/groups. Of particular relevance to the line of inquiry that will be followed during the fieldwork phase of this project, is whether any discernible basin-wide patterns of change in the physical and the social environment emerge and, if so, whether there are patterns of behavioral changes that can be discerned. It is also important to examine ways in which livelihoods have been sustained in the face of risk and uncertainty around agricultural modes of production. An overriding question that must be asked is, how valid it is to advocate agriculture-based livelihoods in the basin and if it is valid, to what extent these activities contribute to sustainable livelihoods for the people living in the basin?

Also relevant to the next phase of the project is the impact that the socio-political environment has had on indigenous water management. The rise (and sometimes fall) of civilizations, kingdoms, states and institutions, has had important contemporary implications. What is currently perceived as ‘indigenous’ is a construction of political and social interactions of various groups of people within defined but fluid historical periods. This also raises the question of what new ethnic/indigenous water management practices are under construction in the basin today. What processes occur at the local level and what is the extent and nature of the modifications in patterns of behavior that are a result of changes over time in both the physical and socio-political environment? It is necessary to uncover the vestiges of indigenous water management in the basin and to explain the variation and endurance of indigenous practices. The relationship between the current state and traditional/ indigenous regimes is a crucial area of inquiry, particularly because of the uneven success of state interventions. While the state has managed to claim the legal and administrative domain, there is still opportunity available for indigenous water management systems to prosper. To what extent do states recognize this fact, and what form does this recognition take, if any?

The spread of the concept of IWRM and how it relates to indigenous water practices is another relevant line of enquiry. “Official” IWRM is largely untested at local levels in terms of relevance and application, and even less so within the context of riparian countries. In what ways, if at all, does IWRM take into account the livelihoods of local people, particularly in the case of indigenous institutions operational within the basin? A critical aspect of this study is the issue of boundaries. IWRM promotes governance along hydrological rather than political-administrative boundaries. And yet, indigenous or traditional water management tends to be premised on local political and social structures. This questions whether new boundaries proposed within the principles of IWRM can, or should, replace long standing boundaries and whether, instead, in the light of local traditional water management regimes, there are elements of IWRM that need to be questioned? Up-scaling of local traditional regimes pose challenges, not just at the national level, but also at the basin level. The fieldwork phase of the project will provide insights into these and many other unanswered questions.

Sumário

Este documento apresenta uma panorâmica das estruturas e instituições de governação relacionadas com a água na Bacia Hidrográfica do Rio Limpopo. A Bacia Hidrográfica é de importância socio-económica fundamental para os 14 milhões de pessoas, distribuídos pelos quatro países ribeirinhos: o Botsuana, Moçambique, África do Sul e Zimbabué. Os centros urbanos, na sua maioria no Botsuana e África do Sul, são grandes utilizadores de água fornecendo indústrias, estações geradoras de electricidade e municipalidades. A água é também utilizada nas áreas rurais para uso doméstico, dar de beber ao gado e irrigação. Apesar das actividades de irrigação agrícola estarem concentradas principalmente na África do Sul e no Zimbabué, a maioria das populações rurais praticam a agricultura alimentada com a chuva, o que não garante um nível de vida seguro. Tal, deve-se em grande parte, ao clima semiárido da região onde apenas duas em cada cinco estações de colheita agrícola produzem uma quantidade razoável de cereais. Estas condições climatéricas sublinham a necessidade para uma gestão eficaz de recursos hídricos transfronteiriços e estruturas eficazes de governação e mecanismos de distribuição e controlo desses recursos. Quadros institucionais e estruturas de governação apropriados desempenham um papel fulcral na definição da situação socio-económica das populações da Bacia Hidrográfica.

Este projecto esforça-se por avaliar o potencial das instituições indígenas para contribuir para uma governação dos recursos hídricos eficaz como parte integral do sistema jurídico pluralista de gestão de água. Tal é significativo porque as populações da Bacia Hidrográfica e em todo o continente africano, apesar de serem governadas pela lei estatutária e por instituições formais, estão ainda influenciadas por sistemas anteriores à lei estatutária. Em alguns casos, estes sistemas operam independentemente ou juntamente com as leis estatutárias. Ao proporcionar um esboço da história hidropolítica da Bacia Hidrográfica, este documento apresenta material básico como um prelúdio à investigação no terreno que está a ser levada a cabo na segunda fase do projecto. O material aqui apresentado é, por isso, baseado em grande escala em fontes secundárias de dados, incluindo fontes de literatura académica em história, arqueologia, antropologia etc. e ainda em fontes públicas. Estes dados foram analisados em relação aos objectivos chave do estudo.

O documento começa por definir dois conceitos recorrentes importantes: *indígenas* e *instituições*. Assim, neste documento entende-se por instituições um modelo regularizado de comportamento que emerge de estruturas profundas que podem referir-se a um grupo de regras ou organizações que podem envolver regras e regulamentos construídas legalmente ou de carácter informal (Leach et al. 1997; Berry 1989; cf. North 1990; Folke and Colding 2001; Nemarundwe 2003). O documento endossa a discordância de Nemarundwe (2003) segundo a qual, muitas vezes, é difícil separar as instituições das estruturas ou organizações que garantam que elas sejam respeitadas e, por isso, é melhor estudá-las em conjunto. 'Os povos indígenas' são usados em antropologia 'para descrever um grupo não dominante num território delineado com uma reivindicação mais ou menos reconhecida de "aboriginalidade." Por isso, as instituições indígenas podem ser definidas como regras, normas e sua aplicação na vida dos grupos **rurais** cujo sustento está predominantemente baseado **na agricultura de pequena escala** (produção de cereais, gado, pescaria, caça / colheitas)**;** cuja coesão sócio política é baseada num **sentido de etnicidade** e

não só no seu local de residência e para quem a **autoridade tribal ou instituições de auto governo local** desempenham um papel em alguns ou muitos domínios da vida, para além dos governos locais "modernos" e instituições de gestão de água induzidas pelo estado ou de carácter privado.

A evolução das estruturas de governação indígena e a sua interligação com enquadramentos estatutários é analisada nos termos da história sócio política que é específica a cada um dos países ribeirinhos, dadas as suas experiências únicas. Os dados demonstram que a Bacia Hidrográfica do Rio Limpopo é predominantemente habitada por populações que falam algumas línguas da família linguística Bantu. Uma análise da língua e grupos populacionais nos quatro países da bacia hidrográfica demonstra que alguns vivem através das fronteiras dos estados e que grupos étnicos diferentes são também encontrados a viver nas mesmas áreas e localidades. Há também semelhanças sobre a forma através da qual as instituições associadas com as cerimónias para implorar a chuva estão estruturadas em todos os países da bacia. Apesar das semelhanças, o perfil conclui que as tonalidades locais são significativas e não devem ser subestimadas porque os quatro países aos quais estes grupos agora pertencem registaram desenvolvimentos históricos muito diferentes uns dos outros. Estes desenvolvimentos tiveram a tendência de causar diferenças substanciais entre os grupos e os seus regimes de governação tradicionais. Apresenta-se como hipótese que as interacções sociais entre os diferentes grupos étnicos na mesma área ou localidade geográfica moldaram as práticas de gestão dos recursos hídricos e as estruturas de governação tradicional. Por outras palavras, as práticas que eram originalmente partilhadas pelos grupos com uma origem histórica idêntica seguiram diferentes direcções dependendo dos sistemas sócio políticos a que os grupos foram sujeitos. Tal situação mantém-se como uma interessante linha no tema de investigação como o é ainda a possibilidade das semelhanças no seio do mesmo grupo étnico residente em diferentes países, especialmente se é mantido um determinado nível de interacção ou ainda se os grupos vivem em localidades contíguas.

O perfil sublinha ainda riscos potenciais que são devidos a fenómenos como as mudanças climatéricas com o potencial de prejudicar as actividades dependentes da água como, por exemplo, a agricultura. A exposição a tipos diferentes de riscos provoca a questão de variação nos tipos de respostas que as populações locais / indígenas adaptaram às alterações ambientais tanto a curto como longo prazo e considera a forma como tais adaptações variam tanto entre os meios ambientes micros como no seio das localidades ou grupos. Neste projecto, é de relevância particular à linha de investigação que será seguida durante a fase de trabalho no terreno, a possibilidade de ser discernível a emergência de algum modelo de mudanças no meio ambiente físico e social em toda a bacia hidrográfica e, em caso afirmativo, se há espécimes de alterações no comportamento que podem ser distinguidas. É também importante examinar as formas que têm vindo a sustentar os meios de vida frente aos riscos e incertezas que rodeiam os modos de produção agrícola. Uma pergunta primordial que deve ser feita é: - até que ponto é válido fazer a advocacia de meios de subsistência baseados na agricultura na bacia hidrográfica e, no caso de o ser, até que ponto contribuem estas actividades para com os meios de subsistência sustentáveis das populações que vivem na bacia hidrográfica?

É também relevante para a próxima fase do projecto o impacto que o meio ambiente sócio económico teve na gestão indígena dos recursos hídricos. A edificação (e algumas vezes a derrocada) de civilizações, reinados, estados e instituições tem tido importantes implicações contemporâneas. O que actualmente é entendido como "indígena" é uma edificação de interacções políticas e sociais de vários grupos de pessoas integradas em períodos históricos definidos mas fluidos. Tal situação levanta também a questão de quais são as novas práticas étnicas / indígenas de gestão de recursos hídricos que estão a ser hoje edificadas na bacia hidrográfica. Quais são os

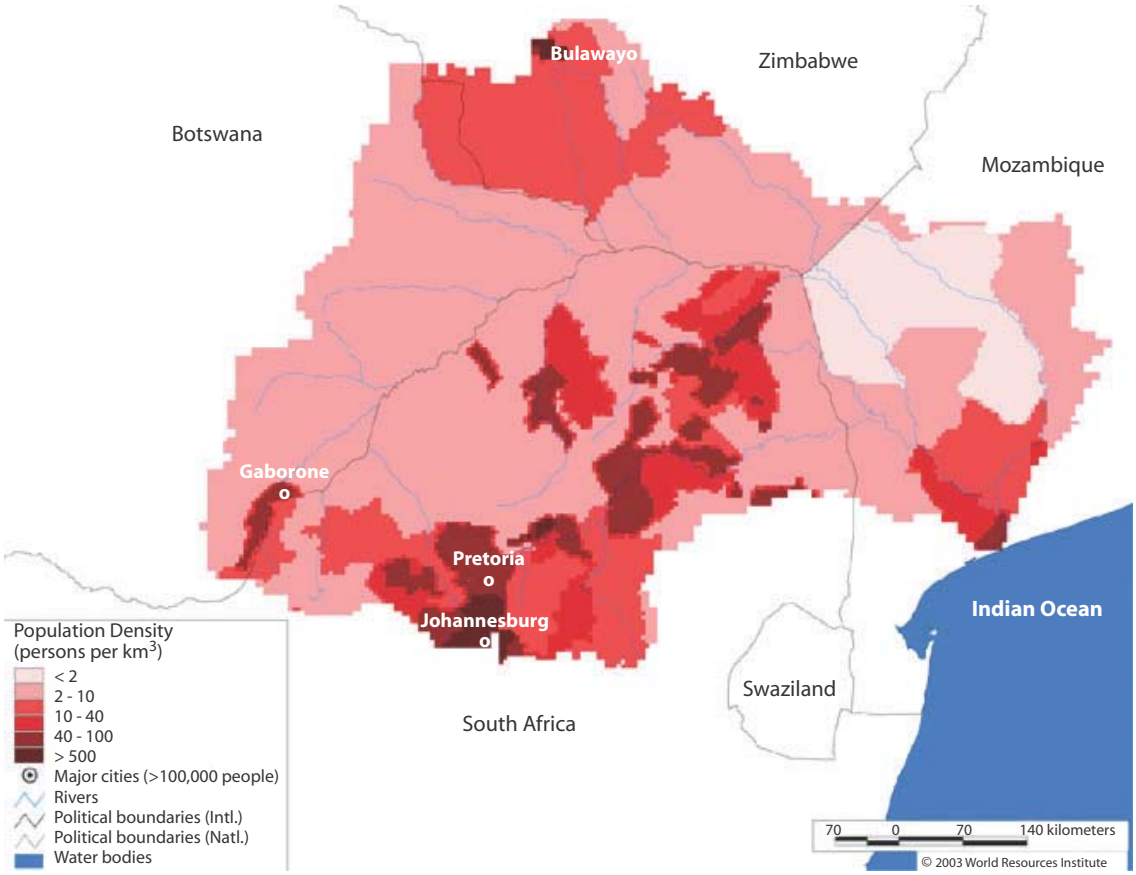
processos que ocorrem a nível local e qual a extensão e natureza das modificações no modelo de comportamento que são um resultado directo das mudanças realizadas com o decorrer do tempo, tanto no meio ambiente físico como no sócio político? É necessário desvendar os vestígios da gestão indígena de recursos hídricos na bacia hidrográfica e explicar a variação e a capacidade de resistência das práticas indígenas. O relacionamento entre os regimes actuais de estado e tradicionais / indígenas é uma área crucial de investigação, devido particularmente ao sucesso irregular das intervenções estatais. Apesar do estado ter chamado a si o domínio legal e administrativo, há ainda oportunidades disponíveis para que os sistemas indígenas de gestão de recursos de água possam prosperar. Até que ponto os estados reconhecem este facto e, se o fazem, que forma assume tal reconhecimento?

A propagação do conceito de IWRM e como este se relaciona com as práticas indígenas relacionadas com os recursos hídricos é uma outra linha de investigação relevante. Até ao momento, o IWRM "Oficial" quase que não foi testado aos níveis locais em termos da sua relevância e aplicações e muito menos o foi no contexto dos países ribeirinhos. Sob que formas o IWRM toma em consideração os meios de subsistência das populações locais, se é que o faz, particularmente no caso de instituições indígenas que operam na bacia hidrográfica? Um aspecto crítico deste estudo é a questão das fronteiras. O IWRM promove a governação dentro dos limites hidrológicos em vez de nos limites político administrativos. Apesar disso, a gestão indígena ou tradicional dos recursos hídricos tende a estar baseada em estruturas locais de ordem política e social. Tais questões sobre se os novos limites propostos em relação aos princípios da IWRM podem ou devem substituir limites há muito introduzidos e se há, em vez disso, elementos da IWRM que necessitam de ser investigados à luz dos regimes de gestão tradicional local de recursos hídricos? Intensificar os regimes tradicionais locais apresenta desafios não só a nível nacional como também a nível de bacia hidrográfica. A fase do projecto de trabalho no terreno irá proporcionar um conhecimento sobre estas e muitas outras perguntas que ainda não foram respondidas.

INTRODUCTION

The Limpopo River Basin is home to around 14 million people in four riparian states, Botswana, Mozambique, South Africa and Zimbabwe. Three of these four states (with the exception of Mozambique) are the most economically developed states in southern Africa (Turton 2003). Their contribution to the Southern African Development Community (SADC) GDP in 2002 was as follows: South Africa - 65.7 percent; Zimbabwe - 3.6 percent; Botswana – 3.1 percent and Mozambique – 2.2 percent (SADC n.d.). Urban centers such as Gaborone, Francistown (both in Botswana), Pretoria, (parts of) Johannesburg and Polokwane (all in South Africa) are major users of water resources of the basin, supplying industries, power stations and municipalities. Juxtaposed to these urban centers are rural areas where water is used for domestic purposes, livestock watering and irrigation. Irrigation, concentrated largely in South Africa and Zimbabwe tends to rely on stored water. The majority of the rural population relies on rain-fed agriculture for their livelihoods. Such livelihoods are largely insecure as sources of sufficient and sustainable food supply because of the semi-arid climate and extremely variable rainfall. Figure 1 shows some of the details that have been discussed.

Figure 1. Hydrological, political, and population characteristics of the Limpopo Basin.



Source: Louw and Gichuki 2003.

Some of the above-mentioned rural communities are related to or descended from the kingdoms, societies and empires which existed in the basin over the past 2,000 years, attracted to the water and other resources. Groups such as the Zimbabwe culture settled and farmed in the basin at sites such as Mapungubwe, K2 and Great Zimbabwe from as early as 1000 AD (Huffman 2000). These groups became affluent from farming and controlling long distance trade with settlements on the east African coast, and developed complex social structures for governing natural resource management. One study has shown that the rise and fall of these empires can be linked to climatic conditions in the basin, with drier periods prompting abandonment of established sites in favor of migration to wetter areas of the basin (Huffman 2000).

Significant changes in the way water resources are managed in the basin have been recorded due to a combination of natural, political and social factors. The imposition of nation-states by colonial authorities in the nineteenth century changed the landscape by parceling out natural and human resources to the newly created states irrespective of existing social and political realities. The dilution, and in some cases obliteration of the socio-political fabric resulted in severe economic disruptions for local populations based on agriculture. Decades of interventions aimed at improving agriculture of local populations have not yielded the expected results. Agricultural water use and agricultural production still remain low, despite the introduction of "appropriate" technologies. It can be argued that one of the reasons for this is the neglect of local level water institutions that might prove more efficient in meeting the needs of the local population.

This paper sketches the hydro-political profile of the Limpopo Basin based on the hypothesis that local institutions are critical to viable livelihoods of the local people. Leach et al. (1997) and Berry (1989) define 'institutions' as regularized patterns of behavior emerging from underlying structures or sets of rules in use. There have also been attempts at distinguishing between institutions and organizations. North (1990: 5) defines institutions as the rules of the game, while organizations are taken to be the players or the groups of actors 'bound together by some common purpose'. Institutions also encompass formal legally constructed and informal rules and regulations (Nemarundwe 2003). At the local level, institutions are often informal and based on traditional norms and values (Folke and Colding 2001). It is important to note that institutions deal with different issues. For example, at the local level, some institutions may be more directly associated with resource management activities, while others may be more closely associated with cultural belief systems. Nemarundwe (2003) observes that it is often difficult to separate institutions from the structures that ensure that the institutions are adhered to; therefore, they are usually studied together. This approach is adopted in this paper.

There are various forms of institutions involved in the management of natural resources, such as water, at local level. These can be categorized under three broad areas, state institutions, civil society institutions and traditional institutions (Nemarundwe 2003). State institutions, also called formal or modern institutions, are defined broadly as regularized patterns of behavior recognized in law. These derive their legitimacy from statutory instruments, elections, etc. Civil society institutions can be external or internal. External civil society institutions are mostly donor-funded and usually not resident within the community. Their source of legitimacy is usually funding and access to other material resources. Internal civil society institutions are usually locally-based, although often initiated by donors. Legitimacy of these comes from elections, the external civil society and constitutions. Traditional (indigenous) institutions are also called informal institutions and are defined as conventions and social norms of behavior, which are usually very flexible in their operation and have fluid boundaries. They are usually based on kinship and lineage ties, and spiritual and cultural values and belief systems.

The term *"indigenous"* is ill-defined and carries a wide range of meanings. A dictionary definition would read as *"Indigenous: belonging naturally to a place …i.e., of the people regarded as the original inhabitants of an area."* An exclusive definition such as this would leave only the San Bushmen as indigenous inhabitants of the basin (and much of the rest of southern Africa). Another more useful understanding of the term 'indigenous people' is used in anthropology to describe a group in a delineated territory with a more or less acknowledged claim to aboriginality whose productivity is linked with non-industrial mode of production. The current project proposes the following working definition: *'indigenous'* institutions refer to rules, norms and their enforcement of:

- **rural** groupings whose livelihoods are predominantly based on **small-scale agriculture** (cropping, livestock, fisheries, hunting/gathering); and

- whose socio-political cohesion is based on a **sense of ethnicity**, besides residence, and

- for whom **tribal authority or local self-governing institutions** play a role in some or many domains of life, besides 'modern' local government and state-induced or private water management institutions.

This indigenous institutional profile describes various indigenous institutions, laws and regimes around natural resources management, with particular emphasis on water and is organized chronologically. Despite the fact that the current project is focused on water governance structures, it includes governance structures of other natural resources (land, trees, animals, etc), because these frequently have a direct bearing on water resources. For example, control of, or rights to, a particular parcel of land may include implicit or explicit allocation of other resources found on that land. A change in land use would, in most cases, lead to a change in the impacts on water resources as well.

'Customary law' forms an important dimension of indigenous water management, because its application poses a number of challenges. Bennett (2004) has provided a treatise on the subject in relation to southern Africa. While the discussion is based on examples from marriage, wills and administration of estates, it nevertheless provides valuable insight into the complexities that are involved. Colonialism is an important backdrop against which customary law has been applied in the region.

There are three broad areas where the challenges associated with customary law manifest themselves. The first relates to the nature of customary law. Bennett (2004) observes that the possibility of vagueness and ambiguity is quite high in customary law, since it is largely unwritten and survives in oral tradition. Customary rules are generated by community acceptance of certain standards of behavior. The tendency of some African societies to be decentralized and acephalous means that the authority of customary laws extends only as far as people affected are inclined to accept it. Because it is largely undifferentiated and unsystematic, customary law tends to be general and imprecise. This, however, can be seen as a desirable trait of flexibility (ibid).

The second group of challenges relates to ascertainment of customary law, i.e., how to prove and ascertain customary law. In South Africa and Zimbabwe, this has been generally left to the courts to solve. In Botswana, however, there is legislation that regulates the ascertainment of customary law in the form of the Customary Law (Administration and Ascertainment) Act.

The third group of challenges refers to potential conflict areas in the practical application of customary law. There are five such areas, namely:

i) Conflicts between domestic (meaning the law applicable in a specific state) common law and domestic system of customary law. This is an internal conflict (in the modern state) where the question is about social and legal pluralism within the state.

ii) Conflicts between two or more domestic systems of customary law. This can be seen as an inter-tribal conflict regarding the supremacy and subordination of different customary laws.

iii) Conflicts between a domestic system of customary law and a foreign system of customary law.

iv) Conflicts between a domestic system of common law and a foreign system of customary law; and

v) Conflicts between a foreign system of common law and a domestic system of customary law.

This paper documents water-related governance structures and institutions in the Limpopo Basin, paying particular attention to situations of potential legal pluralism. In these situations, people are governed by statutory law and institutions while still operating under institutional arrangements that, in some cases, pre-date statutory law or operate independently of the framework of statutory law.

The material presented here is largely based on secondary data sources, which include historical, archaeological as well as legal and policy documents. The information gleaned from these sources was analyzed in relation to the key objectives of the study. It needs to be pointed out, however, that the sources were rather limited as far as indigenous water management structures are concerned and were in fact often limited to purely anecdotal evidence.

CURRENT DISTRIBUTION OF ETHNIC AND LINGUISTIC GROUPS IN THE LIMPOPO BASIN

Before the evolution of indigenous resource governance structures and their interface with statutory frameworks are described, it is useful to provide an overview of the present-day distribution of ethnic and linguistic groups in the basin. The overview of language and population groups in the four basin countries reflect that some of the groups are found across nation-state boundaries while different ethnic groups are found in the same locality.

While groups of similar origin exist in the different countries, the influence of the nation state should not be underestimated. Since the nation states to which these groups now belong have seen different historic developments, substantial differences between the groups and their traditional governance regimes have emerged over time. As far as traditional governance regimes are concerned, groups of different origin situated in the same nation state might share more similarities with each other than with groups of the same historic origin situated in a neighboring nation state.

This study therefore looks at the current situation on a country basis in order to adequately address this reality[1].

1. Botswana

'Botswana' in Tswana literally means 'Land of the Tswana people'. This has given the impression, both within and outside the country, that Botswana is an ethnic monolith. The recognition of multiculturalism in Botswana was, until the 1990s, blocked by development of a unifying national culture, which is largely based on Setswana (Tswana language) culture. Diverse people speaking dialects of a common language were incorporated into a string of Tswana states, which were linked by the kinship ties of their rulers. These rulers came together against common enemies. Everyone within the colonial[2] boundaries of Botswana was therefore regarded as a Motswana (plural, Batswana), regardless of ethnic origin. The reality, however, is that less than half the population is 'ethnic Tswana' by origin. There is a greater number of 'ethnic Tswana' in South Africa in a region called Bophuthatswana, which also refers to its population as Batswana, than there are in Botswana.

In spite of aiming for mono-culturalism, eight self-administering tribal reserves have been recognized since before independence (see figure 2). These are recognized as Tswana tribal divisions, although in reality some of them are not of Tswana origin. Today, most Botswana nationals acknowledge membership in one of these eight tribal states – Tawana (Batawana) in the northwest, Ngwato (Bangwato, Bamangwato or Bagamangwato) in east-central areas, Kwena (Bakwena) and Ngwaketse (Bangwaketse), Kgatla (Bakgatla) and Tlokwa (Batlokwa), Malete (Balete or Bamalete) and Rolong (Barolong) in the south-east. However, there exist internal divisions within the eight Tswana tribes. This is reflected in the fact that most political parties active in Botswana have recognized ethnic overtones, i.e., the parties tend to be made up of, and to represent, particular Tswana tribes.

The Botswana constitution states that,

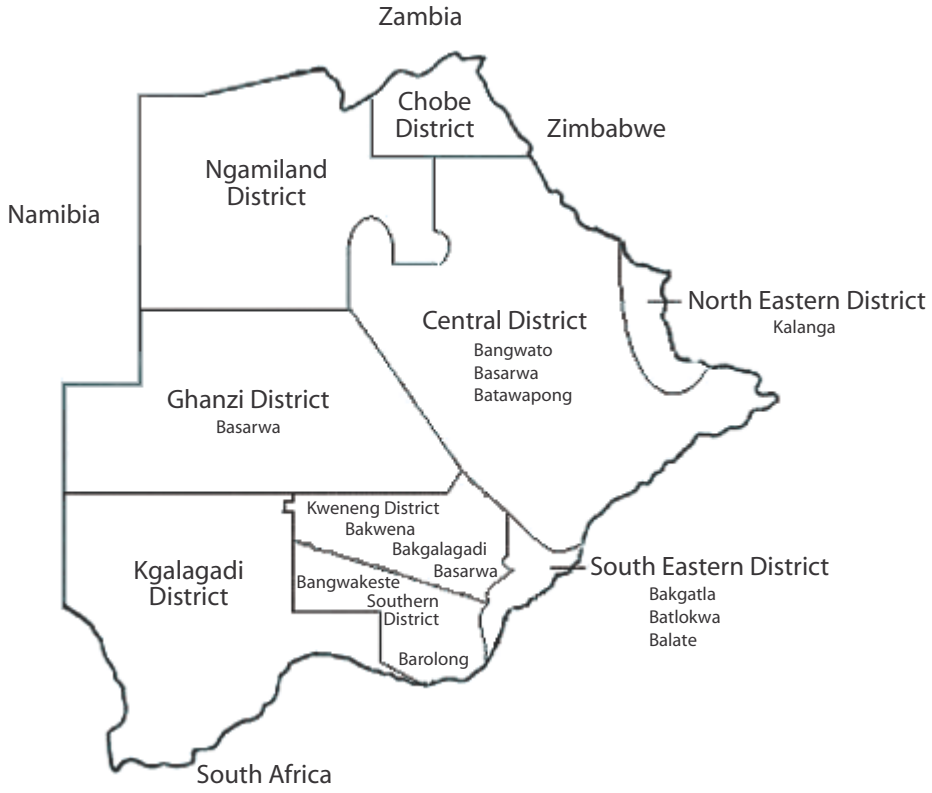
> The ex-officio Members of the House of Chiefs shall be such persons as are for the time being performing the functions of the office of the Chief in respect of the Bakgatla, Bakwena, Bamalete, Bamangwato, Bangwaketse, Barolong, Batawana and Batlokwa Tribes, respectively (Republic of Botswana 1966: Constitution, ch. 78).

These attempts to create a homogenous society have not been very successful and efforts are now underway to change the constitution, so that it recognizes the different tribes in Botswana. A report in the *Daily News* (Friday 8 April 2005) tells of a Member of Parliament who said that he never sings the national anthem, which says 'this land is our inheritance', because it does not apply to his tribe, Bakgalagadi, and he will not sing until the constitution has been changed.

[1]Different terminologies referring to the same population groups can often be found in the literature (e.g., Venda or Bavenda; Shangaan or Shangana). In this profile, the terminology as used by the respective literature sources has been maintained. Some sections discussing specific population groups therefore make reference to more than one name for the same population group.

[2]This term is used loosely to refer to a period that was generally known as 'colonial' in Africa, although Botswana was never a colony but a British protectorate.

Figure 2. Distribution of ethnic and language groups in Botswana.



Source: Department of Surveys and Mapping, Botswana 2001.

Under the section on Botswana's 'colonial era', an attempt will be made to '*tribalise*' the Tswana of Botswana, but below, the present ethnic structure of the Botswana part of the Limpopo Basin is presented. The major ethnic groups in the Botswana part of the basin are the Tswana, Kalanga, Basarwa, and Kgalagadi.

Tswana: this is the largest ethnic group and comprises more than half of the total population. Of the eight Tswana tribes, the groups present in the Limpopo Basin are the Bakwena, Bangwato, and Bangwaketse. The Ngwato constitute the largest traditional 'tribal' state, although they are in reality less than one fifth ethnically 'pure' Tswana. They constitute the Khalagari, Tswapong, Birwa and Kalanga peoples. The Tswapong and Birwa, who live on the edge of the Limpopo Valley, are related in kinship and language to the Pedi (Northern Sotho) people who live across the Limpopo River in South Africa.

Tswana culture emphasized livestock rearing among the different groups as opposed to crop production activities. Livestock rearing therefore remains a significant cultural status symbol and source of rural livelihoods. Often, the poorest villagers find informal employment herding livestock for the relatively well off community members living in towns and cities.

Kalanga: The Kalanga, originally from Zimbabwe, and presently found on the Botswana/Zimbabwe border, occupy the upper northeastern part of the basin along the Shashe river. Sometimes referred to as Ngwato simply because they live within the Ngwato administrative boundaries, they are said to be the largest and most vocal ethnic minority in Botswana. The Kalanga group is also larger than any of the constituent groups of the Tswana cluster. Related to the Zimbabwean Karanga (Karanga is a dialect of the Shona language in Zimbabwe) and other Shona peoples of Zimbabwe;

their language (western Shona) is very different from Tswana (western Sotho). The Ngwato overlords reduced Kalanga traditional rulers to sub-chiefs; therefore, Kalanga ethnic activists consider their identity in terms of antagonism to the Ngwato. The Kalanga were known for producing arable crops, had greater access to missions and therefore education and they had access to Zimbabwe (because of their physical location), thus creating inequalities with the Tswana.

While the Kalanga would be antagonistic to the Tswana, the situation on the ground is varied; some of the Kalanga opt for militant assertion of their Kalangahood against the Tswana, especially the Ngwato; while some (the majority and most of the middle class) limit expressions of Kalangahood to private situations while publicly exchanging this for submission to Tswana domination for political and economic success. They have, therefore, hung on to their own tribal identity while adopting Setswana culture and becoming integrated into Botswana national society.

Kgalagadi are located in south-east Botswana, although they have also been incorporated into Tswanadom - so much so that they are now almost indistinguishable from the Tswana. Today, the name refers to people living in the Kalahari Desert. Presently, the tribe is made up of about five main groups: the Bakgwateng, Babolaongwe, Bangologa, Baphaleng and Bashaga. The first four groups, however, trace their ancestry back to a common origin. Bashaga are believed to have fled into the area and joined the Babolaongwe group. The Khalagari, whose language is closely related to Tswana (Central Sotho), can also be referred to as 'Western Sotho' from where they originate. Khalagari are therefore culturally Sotho, and their prowess was in cattle raising and hunting rather than farming. Their name has now adopted a Tswana form, i.e., Kgalagadi (Kalahari in English) and this is the official Tswana term for the desert named after the Khalagari people.

Basarwa (San Bushmen) are traditionally hunter-gatherers with the men hunting and the women gathering, although this division of labor is not fixed. They do not cultivate crop land, although they may own some livestock, mostly for subsistence. This group is found mixed with other Tswana groups and their culture has been corrupted by the incorporation into the Tswana culture. Today only a few Basarwa remain.

2. Mozambique

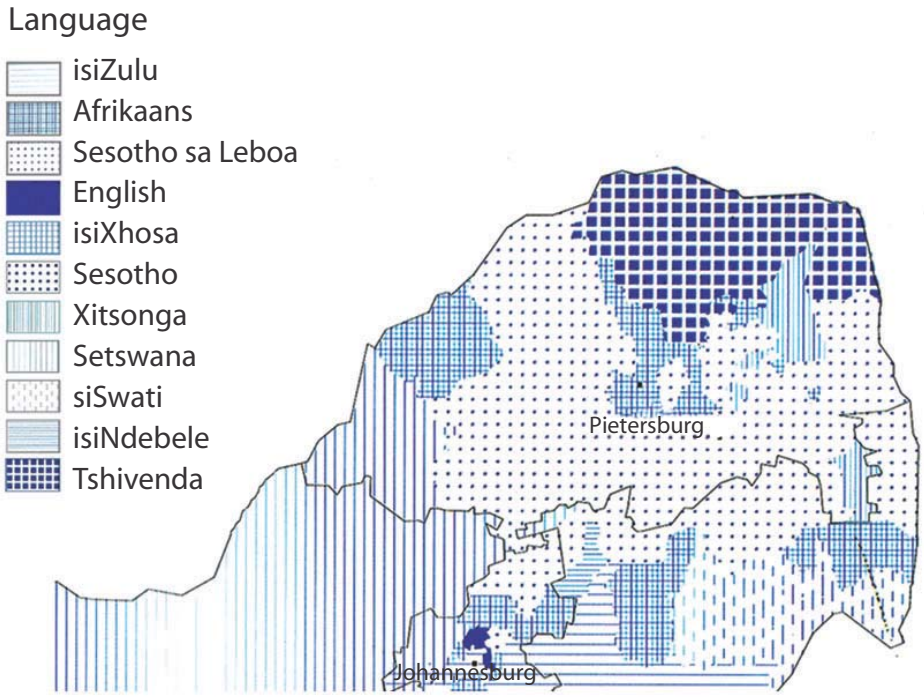
The Mozambican part of the Limpopo Basin is populated by three different ethnic groups, the Changana, the Copi and the Tshwa. Of these, the Changana (which speak the Tsonga dialect of Xichangana) and Tshwa are sub-groups of the larger Tsonga group, whilst the Copi (speaking Cicopi) arose from a mixture of peoples in the 1700s (INGC et al. 2003). The Changana are the majority ethnic group within the Mozambique part of the basin, populating the Western and Southern parts of Mozambique's basin area. This area contains the districts of Massangena, Chicualacuala, Massingir, Chigubo, Mabalane, Guijá, Chókwe, Bilene, Xai-Xai, Cidade de Xai-Xai, as well as most parts of Chibuto. Small areas of Chibuto and Panda district are populated by Copi. The Tshwa are concentrated along the eastern border of the basin in Mabote and Funhalouro districts, as well as parts of Panda and Massinga districts (figure 3).

The current distribution of Tsonga sub groups in the Limpopo Basin resulted from a series of Bantu migrations during the early nineteenth century (INGC et al. 2003), following the expansion of the Zulu empire. These migrations were precipitated by a severe period of drought that began in the 1790s, culminating in the widespread famine reported in 1830 (INGC et al. 2003). Around this time, the Nguni (the Nguni people formed part of the Ndebele empire – see Zimbabwe section

Figure 3. Distribution of ethnic and language groups in the Mozambican part of the Limpopo Basin.

Source: INGC et al. 2003.

Figure 4. Distribution of language groups in North-Eastern South Africa, including the South African part of the Limpopo Basin[3].



Source: Van der Merwe and Van Niekerk 2004.

[3]Pietersburg has since been renamed into Polokwane.

below) warlord, Soshangane, founded the Gaza Empire on the southern banks of the Limpopo, now the district of Bilene. This empire dominated the Limpopo Basin and reached as far north as the Zambezi until the late 1890s (INGC et al. 2003). Gungunhane, the last king of the Gaza Empire, moved the capital to Manjacaze (just outside the Limpopo Basin about 40 km from the coast), from where he could control and exploit the Limpopo Delta, while remaining above the flood zone of the coastlands (INGC et al. 2003)[4].

3. South Africa

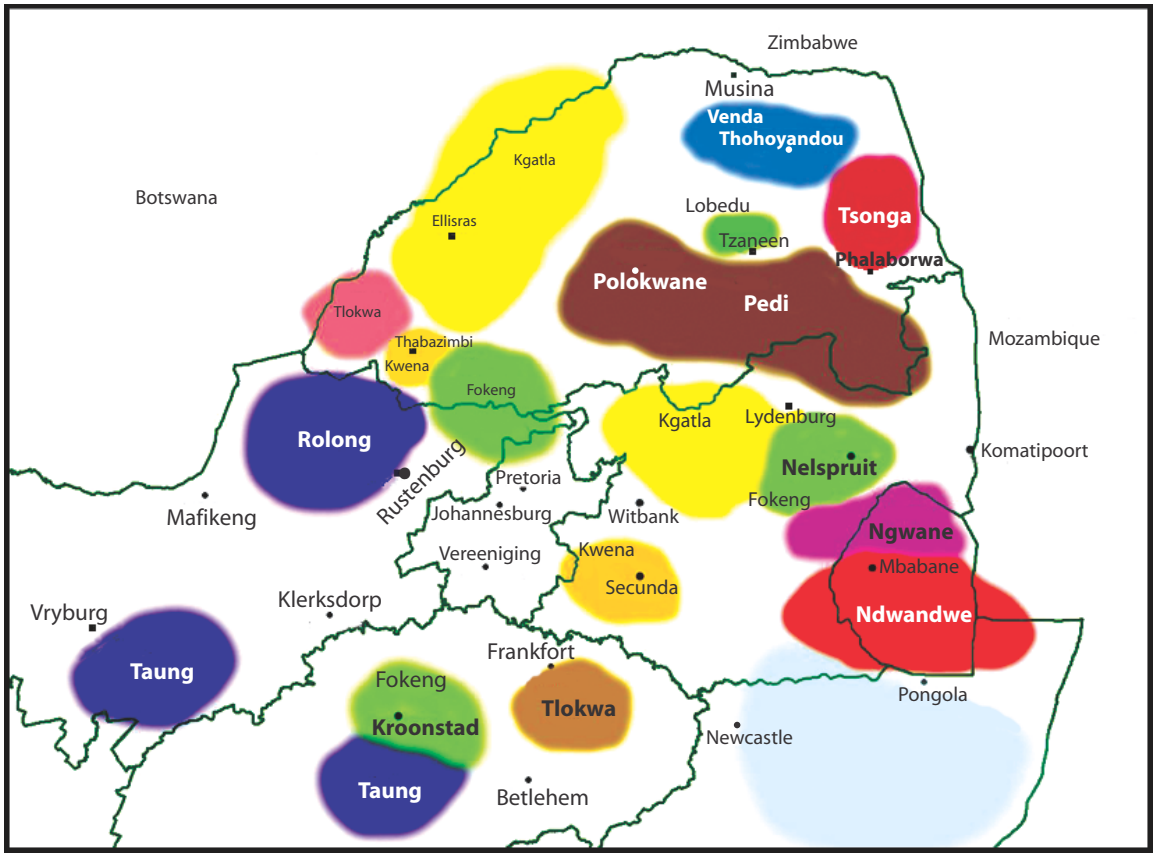
Besides some patches where Afrikaans, primarily spoken by the white population, is the dominant language, the main languages spoken in the South African part of the Limpopo Basin are Setswana, Sesotho, Xitsonga and Tshivenda (figure 4). The distribution of dominant languages, as indicated on the map, also represents the settlement areas of the main population groups in the South African portion of the Basin, as they are today. The western parts of the basin are home to Setswana speaking Tswana people (also referred to as Western Sotho) while the central parts are populated by Sothos. The Venda settled in the Northern and Northeastern areas of the South African parts of the basin with Tsonga people living in the Eastern parts, in the South African lowveld area. A further, more detailed description of ethnic and language groups in the South African part of the basin is provided in the following overview.

Background to Bantu speaking groups north of the Vaal River

Ethnographers generally divide major Bantu-speaking groups of southern Africa into two groups, the Nguni and the Sotho, although smaller subdivisions existed under these two main groups. Nguni groups were found in the eastern parts of the interior of South Africa and can be divided into the north Nguni and the south Nguni (figure 5). The various Zulu and Swazi groups were generally associated with the north Nguni, whereas the Xhosa, Mpondo, Thembu and Mpondomise groups are associated with the south Nguni. The same geographically based divisions could be found among Sotho groups, where, under the Western Sotho (or Tswana), one would be able to identify groups such as the Rolong, Hurutshe, Kwena, Fokeng and Kgatla. The Northern Sotho, on the other hand, were characterized by the Pedi as well as an amalgamation of smaller groups identified as the Basutho, or the south Sotho group. Other smaller language groups such as the Venda, Lemba and Tshonga Shangana, developed outside these more distinct and larger groups, but as time progressed they were to a lesser or greater degree influenced and absorbed by neighboring groups. One should remember the terms “Nguni” and “Sotho” refer to broad and comprehensive groups that show similarities in their origins and language. The term does not imply that these Nguni / Sotho groups were homogeneous and static because these population groups experienced geographical and cultural fluidity.

[4]Acknowledgement to Neels Kruger, University of Pretoria (Department of Anthropology/Archaeology) for his research into the ethnic groups in the Limpopo Basin – South Africa.

Figure 5. Distribution of Bantu-speaking groups in the interior of South Africa c. 1800.



Source: Van Aswegen 1980.

The Bavenda

The cultural heartland of the Bavenda is the Nzhelele Valley and Sibasa District in the Soutpansberg and its surroundings. The Bavenda inhabit the Limpopo Valley to the far north of the Limpopo Basin and large areas to the east of the Limpopo Province that surround the town of Thohoyandou.

The landscape north of the Soutpansberg has played important ecological and cultural roles in the history of South Africa. The Limpopo River, as well as three other rivers in the area, the Sand, Nzhelele and Nwanetsetsi, have provided water, whilst the fertile soils surrounding the rivers have been able to provide food. The foothills north of the Soutpansberg have provided shelter to a vast number of people stretching over generations. The Nzhelele River, which originates high in the Soutpansberg, cuts through the landscape and winds through the heartland of present-day Venda at the foothills of this mountain range. Its path follows an ancient fault line that stretches across the plains north of the Soutpansberg and past the remnants of a prehistoric volcano to be found at present-day Tshipise. The river meanders through a series of sandstone hills, known as the Ha-Tshirundu Mountains, and ends in the Limpopo at the mountain Ha-Dowe, an important site for people occupying both sides of the Limpopo. This section of the Limpopo Valley has been utilized and cultivated from the earliest times and today, the offspring of a great number of well known cultural figures live in the area where their ancestors lie buried. Significant moments in the history of South Africa have taken place around the Nzhelele area and its surroundings.

A summary of the history of the Venda

Linguistically and culturally the Bavenda display similarities with the western Shona (or Kalanga) of Zimbabwe (Wentzel 1983). According to Peires (1986), the Venda nation was Shona in origin. Some aspects of the Venda vocabulary can, however, also be compared to that of the Sotho. Despite these similarities, Venda has sufficiently unique elements to be considered as a distinct language. The language of the Venda has three regional variants. An archaic form of Venda known as Twamamba still exists in the north-western Soutpansberg, and another dialect called Ilafuri is spoken in the western and central mountains. An eastern variant known as Tshimbedzi is used by Venda people in southern Zimbabwe (Loubser 1988).

The origins and political history of the Bavenda have intrigued researchers and scholars. Two schools of thought have dominated interpretations of Venda origins: an early school emphasizing migration, and the current school emphasizing local development (Loubser 1988). The first migration-focused school based their hypotheses on Singo oral traditions, indicating that the ancestors of the Venda originated somewhere north of the Zambezi River in the vicinity of present day Malawi. Singo is the "totemic name" of the politically dominant group among the Venda (Loubser 1988). During their southward migration through Shona territory, several Shona elements were incorporated into this pre-Venda culture. The Singo group, of which at least five different oral traditions exist, moved through present-day Zimbabwe and Shona territory. Here the Singo came into contact with some important Zimbabwean groups, including the Rozvi living at Danangombe, the capital of Changamire Rozwi from about 1693 to the early 1820s, also known as Dhlo Dhlo. The Rozwi are remembered as the principal Zimbabwean dynasty of the past and they were the builders of most of the Dzimbabwe capitals in the country.

It is said that the first three generations of the Singo lineage ruled north of the Limpopo River and the last five ruled in the Soutpansberg, prior to the rule of the Venda chief Makhado in 1864 (Loubser 1988). During the seventeenth century, this group of Shona immigrants, the royal Singo, moved south into South Africa and settled on the banks of the Njelele River (Stayt 1931) near the Soutpansberg. Here they built their capital, known as Dzata. According to this source, they extended their power base and dominated the whole of the Venda Kingdom. Most traditions agree that an united Singo elite expanded from Dzata to incorporate virtually all earlier communities in the Soutpansberg. The Singo Empire came to an end with a dispute over the succession of chief Thoho-ya-Ndou. According to genealogical information, the Singo Empire in the Nzhelele Valley is likely to have dispersed between 1750 and 1800 (Van Warmelo 1935; Stayt 1931). The Bavenda are, therefore, a conglomeration of the original Venda group and several other groups. The Venda family formed the royal group and their leaders were acknowledged as chiefs of the whole population.

Under the leadership of chief Thoho-ya-Ndou, the Venda extended their authority over the Soutpansberg area, and under his rule the area experienced relative peace. After Thoho-ya-Ndou's death, leadership was disputed and three main sections emerged during the split. The three distinct groups, the Western, Eastern and Southern Venda define the basis of the Venda classification (Van Warmelo 1935). The Western section mainly comprises the Ramabulana Singo, the Eastern section, the Tshivase and the Mphaphuli dynasties, whilst the Southern section includes former vassals of the Singo that gradually became incorporated into the Sotho chiefdoms.

In each of these areas independent chiefs ruled the various Venda tribes. While the eastern tribes remained relatively isolated, the western tribes had greater contact with other tribes and white settlers. There is also more information about the origins and development of the Western tribes, whose chiefs descend from the senior bloodline of Thoho-ya-Ndou. Chief Mpephu is recognized as the most senior of all the Venda chiefs of the Western Venda group.

The second and current school emphasis is on local development and bases its interpretation mostly on the fragmented and highly telescoped non-Singo traditions (Loubser 1988: 9). Rather than looking for Venda migrations from central Africa, scholars of the new perspective emphasize localized developments and influences. These scholars stress developments among diverse Venda communities that had existed prior to the Singo. According to researchers, this group of people, the VaNgona, existed in the Nzhelele Valley and they were the builders of the Dzata ruins (Ralushai 1977). They were later scattered all over the Soutpansberg and, with the reign of the chief Thoho-ya-Ndou, became the Bavenda people. Many scientists view this theory of "Venda isolation" as a myth and question the theory of local origins and hypotheses of development that exclude notions of migration.

Present status

Today large rural settlements can be found in the Upper Nzhelele Valley, an area that, in former years was classified as the "Venda homeland." The tropical climate of the Soutpansberg area and daily rain and mist showers high up in the mountain feed into the runoff streams that become the Nzhelele River. The river provides water to the fertile valleys at the foothills of the Soutpansberg. The communities that live in these fertile valleys are predominantly Venda speaking and use the valley for extensive agricultural activity. Water is extracted from the Nzhelele to adjacent farms for irrigation and for domestic use. Some households also depend on the river for food, as it is a rich source of fish. The Nzhelele has played a similar role in the lives of people over many generations and for the Venda people, the heartland has been defined by the Nzhelele River itself.

The Tsonga / Shangaan[5]

The Tsonga/Shangaan people occupy the eastern section of the Limpopo Province along the western border of the Kruger National Park, stretching into both Swaziland and Mozambique. The larger areas surrounding Giyani and Malamulele stretches from the escarpment in the north east up to the Lebombo Mountains. This area is comprised of a highveld escarpment as well as western and eastern plain regions. The northern region is fairly mountainous whilst the southern region levels out to plains. The territory occupied by the Tsonga/Shangaan enjoys summer rainfall with an annual rainfall varying between 500 to 700 mm. As a result of the low rainfall and high temperatures, soil is poor and it does not retain water well. This soil type is not suited to crops, although it does provide good feeding grounds for cattle. Various large rivers (Great Letaba, Little Letaba, Levubu Shingwedzi and Nsami Rivers) pass through this area. This eastern section of the Limpopo Province bushveld bordering the Kruger National Park is classified as "Mixed Bushwillow Woodlands." The heartland of the Tsonga/Shangaan is around Giyani and the Letaba Valley.

[5]Harries (1989) examines critically the assumptions of 'Tsonga' ethnicity and his critical examination of ethnicity is pertinent to this report, because all reference to ethnic groups or tribal entities must consider the dynamic and changing nature of these identities and cannot assume an existing 'static' tribal identity that has been carried forward from pre-colonial to colonial times. Harries' point is that ethnicity is a constructed notion and the history of its construction must be addressed.

A summary of the history of the Tsonga / Shangana

The first Tsonga groups appear to have settled in southern Mozambique around 1544 and were agriculturists. In the nineteenth century, three groups existed among the Tsonga people; a southern group that included the Maputa, Tembe and Mpfumo, a central group, including the Khosa, Nkuna Mavunda and Maluleke, and the northern group that was comprised of the Hlengwe and the Tswa.

Settlements of Tsonga sub-groups in the Limpopo Basin were also affected by a severe period of drought that began in the 1790s, and culminated in the widespread famine reported in 1830 (INGC et al. 2003). Around 1820, various Nguni groups forcefully moved into the area of the Tsonga groups in Mozambique. The first Nguni group to strike the Tsonga settlements was that of Zwangendaba (from the Jele clan), followed by Nxaba and his people. The final Nguni group that impacted on the lives of the Tsonga was the Shangana under the command of Soshangane (Manukuza). The Shangana moved into the fertile valleys of the Limpopo Valley, but after the expansion of the Zulu empire (Mfecane) and the military expeditions of the Zulu king Shaka in 1835, Soshangane moved his people north to the Zambezi River. Soshangane integrated various local groups including Shonas into the Shangana group. As has been discussed in the section above on Mozambique, he established the Gaza kingdom (named after his great grandfather) stretching from the Zambezi River to Delagoa Bay.

A pox-epidemic forced the Shangana to move southwards back into the Limpopo Valley. Various Tsonga groups moved over the Lebombo Mountains in fear of the return of Soshangane, settling to the north of the area later known as Gazankulu. Soshangane's death in 1858 initiated a period of chaos and the disintegration of the Gaza kingdom. He was, contrary to his final wishes, succeeded by his son Mawewe, whose reign was soon violently contested by his brother, Muzila, Soshangane's choice of succession. The dispute over succession between the two brothers caused Tsonga people to move from Mozambique into South Africa. Mawewe died in 1872 and he was succeeded by Hanyana who fled to the former Gaza area after a run-in with the then Transvaal authorities. After Mawewe's death there was a period of peace and stability when many Tsonga groups moved back to their former settlement areas.

Peires (1986) claims that the Tsonga were influenced by Shona and Sotho cultures long before they left Delegoa Bay. According to him, this is because the Tsonga were traders who sailed their canoes as far as 500 km up the Limpopo and Nkomati rivers, trading in gold, ivory, iron, copper, rhinoceros horn, furs, amber, cloth and beads among the Venda, Phalaborwa, Sotho and Portuguese. According to Harries (1989), the use of the term 'Tsonga-speaking' with reference to the nineteenth century is misleading because there was no linguistic unity but rather a rich variety of languages that reflected the diverse geographical origins. The codification of Tsonga, as a language, according to Harries (1989), was undertaken only towards the end of the nineteenth century by missionaries who, trained to categorize and classify, reified this linguistic category into an ethnic group.

The Tsonga groups that live in the Giyani-Malamulele areas today are the descendants of groups that fled into the area during the reign of Soshangane and the subsequent power struggle between his sons.

Present status

In 1913, an area exclusively for "black occupation in the Lowveld" was demarcated and it was this area that was later named "Gazankulu". The passing of the Bantu Self-Government Act (Act 46 of 1959) marked the establishment of Tribal Authorities throughout South Africa and the origination of formal Bantu Homelands with Gazankulu as the 'homeland' of the Tsonga / Shangaan.

The Swazi and Ndebele (NGUNI)

The northern Nguni groups were found in a large area covering Mpumalanga, Swaziland, and KwazuluNatal, east of the Drakensberg extending into the Eastern Cape. The groups related to the Swazi can be found in the mountainous kingdom of Swaziland, sections of Natal and Mpumalanga in the mountainous areas including the Drakensberg and the bushveld. The present day Kingdom of Swaziland, sections of Mpumalanga, Limpopo Province and Gauteng are occupied by Swazi people today. Because relatively few Swazi live in the Limpopo Basin, this profile does not cover a history of the Swazi people, which has relevance in particular for the southern sections of the Mpumalanga and the present day Swaziland itself, a nation currently ruled by King Mswati III.

The West and North Sotho (SOTHO)

The Sotho groups were found in the interior of the highveld areas of South Africa. At the end of the eighteenth century, they occupied a large area that included present-day Botswana, large sections of the then Transvaal (today Limpopo Province and Mpumalanga), the Free State Province as well as parts of the Northern Cape.

Archaeological evidence tells us that the area between the Vaal River and the Malopo/Marico/Limpopo rivers was relatively densely populated by the fifteenth century AD by Sotho-speaking relatives. Based on Sotho oral histories, various groups apparently were the originators of the current Sotho-speaking community. At the end of the fifteenth century, Chief Mokgatla broke away from the Hurutshe group and settled in the Witwatersrand area to form the Kgatla. As with the other Sotho groups the Kgatla split into several smaller groups including the Pedi, Tlokwa, Phuting and Kholokwe. The most prominent chieftaincy to separate was the Pedi. Not much is known about the earlier history of the Pedi, but its separation from the Kgatla probably occurred during the seventeenth century. The Pedi moved northeast and settled in the Steelpoort Valley in the south-east of the Limpopo Basin. The initial group became influential over smaller neighboring Sotho groups. The foundations of the Pedi were laid by Chief Thulare. Under his rule, large amounts of cattle and many small communities were assimilated by Pedi and formed the basis for a Sotho state. The Pedi was the only Kgatla group to remain in this part of the Limpopo Basin. Other Sotho groups moved over the Vaal River into the Free State. Today, Western and Northern Sotho groups can be found across the northern parts of South Africa and Botswana, in the Limpopo Province, Northwest and Mpumalanga.

4. Zimbabwe

The Zimbabwean inhabitants of the Limpopo Basin are from two major groups, the Bantu and the non-Bantu. The former outnumber the latter, who were the original inhabitants of the Basin. Most of the non-Bantu were driven out by the Bantu with those who remained being influenced by the Bantu way of life.

The Ndebele, descendants of Soshangane, are the largest ethnic group within the basin, although at national level they constitute about 20 percent of the population. While most discussions on ethnic groups in Zimbabwe focus on the Shona and Ndebele, they ignore the variety of ethnic groups, particularly in the Limpopo Basin. The reason for this will be briefly explained under the pre-colonial section.

The principal ethnic groups residing in the Zimbabwe part of the basin (and assumed to have been present even in the colonial period) are presented below. It should be noted that, while language is perhaps the most distinguishing characteristic, other cultural differences exist. Figure 6 provides a map showing the locations of the various groups.

Ndebele

The Ndebele people are found in the Matebeleland north and south provinces where Ndebele is recognized as the official language. It is the second most widely spoken African language in Zimbabwe after Shona. Most ethnic communities in the Mzingwane catchment therefore speak Ndebele.

Sotho

Sotho is a cover name for a group of related languages namely Kurutsi, Mangwato, Birwa and Sotho. In the context of Zimbabwe, the cover name, Sotho, is generally used to refer to the Birwa. Sotho is spoken in the southwestern part of Zimbabwe, mainly in Gwanda, and in some parts of the Bulilimamangwe (Plumtree) district. Some parts of Beitbridge also have Sotho speaking people (Shashe, Machuchuta, Masera and Siyoka 2). The Sotho are located in regions which are dry and prone to drought. The total population of the Sotho in Zimbabwe is not known, although Hachipola (1998), reports that in Gwanda (where they are most common) they number approximately 56,000.

According to Hachipola (1998), the inhabitants of the area (the Sotho) suggest that the areas they occupy today were once occupied by the Tonga (in other countries this ethnic group is referred to as Tsonga, but are referred to as Tonga in Zimbabwe) and some of the totems of the Sotho are said to have originated from the Tonga. Some of the people moved to the area as a consequence of Zimbabwe's liberation war in the 1970s and during the various phases of land apportionment. Consultations with chiefs, sub-chiefs and councilors in the area by Hachipola (1998) revealed that there were no voluntary migrants to the area due to its arid nature.

Other ethnic communities in the area (Gwanda) include the Ndebele, Venda, Shangani and Nyanja. Some of the population are from Malawi and Zambia, and speak Nyanja and Bemba. The Ndebele language has had a major influence on the Sotho speaking people in Gwanda (where the majority of the Sotho are found), so that most of them are now bilingual with some having shifted their linguistic allegiance to Ndebele, as the languages are related.

Shangani

Shangani-speaking people are found in Beitbridge, Mwenezi and Mberengwa, although they are traditionally from the Chiredzi District. They are also found in parts of Mozambique (where they are referred to as Changana), South Africa and in Swaziland. The word 'Shangani' is derived from followers of Soshangane from the Ndebele Empire. It is therefore a generic or political term that does not specifically describe the peoples who speak the language, because it incorporates such people as the Ndau, Chopi, Ngoni and Nyembani, people who followed Soshangane as he moved north from South Africa. However, in Zimbabwe, official records refer to the language and this group of people as Shangani, although they would prefer not to be called by this name (Hachipola 1998). The estimated population of the Shangani in Zimbabwe is 122,000.

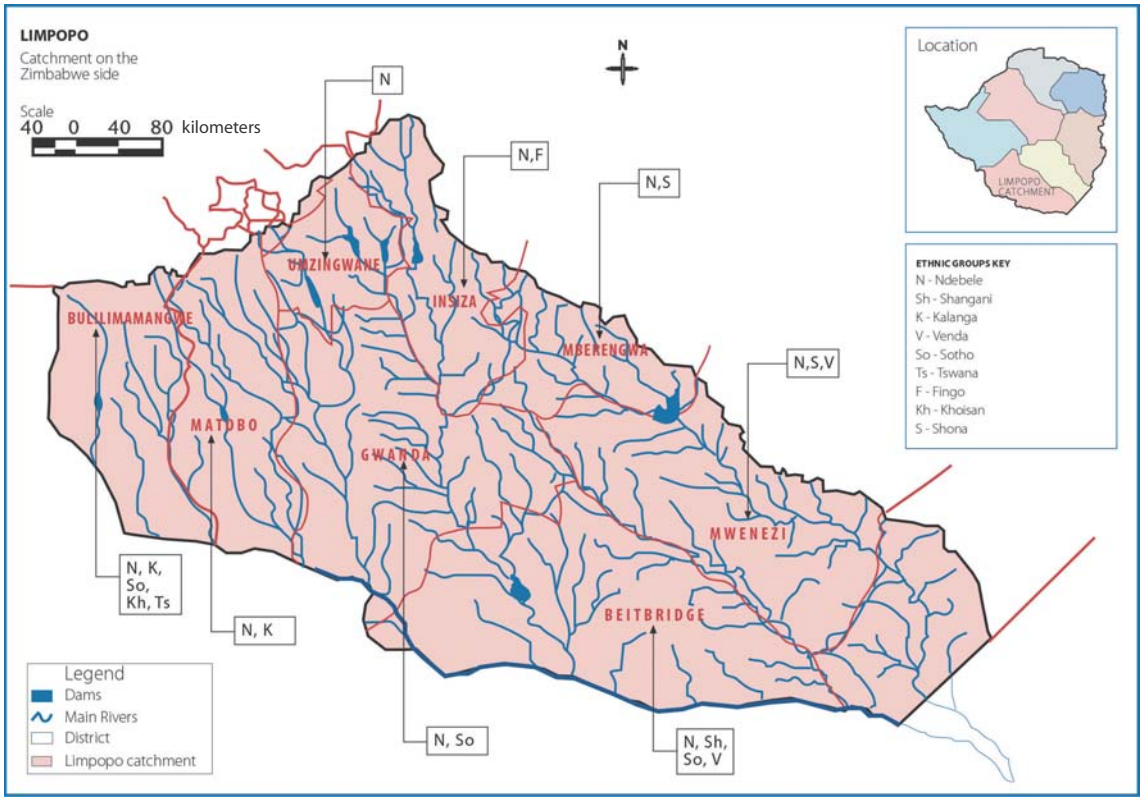
Venda

The Venda-speaking people are found in the southern part of the country in the Beitbridge district of Matebeleland Province, Gwanda, Mberengwa and Plumtree. They are believed to be an off-shoot of the Lemba people who come from South Africa. Within Beitbridge they are located in the Siyoka, Mtetengwe, Masera and Dite Wards. While the Venda form the largest ethnic community in Beitbridge, other ethnic communities such as the Ndebele, Shangani and Sotho also exist. There is also another group, the Pfumbi, who are believed to be a combination of Venda and the Kalanga. The Venda language is influenced by the Kalanga language (a Shona dialect), spoken by the Kalanga people living in the northeastern part of Beitbridge, and Ndebele, which is the common/official language of the district and province. The Sotho language has a strong influence in some parts of the province such as Shashe and Siyoka, since Sotho was once taught in schools in the area. The estimated population of the Venda in Beitbridge is 81,000.

Kalanga

This is one of the dialects of the Shona language and it comprises various sub-dialects such as Rozvi, Lemba, and Nanzva (Nambya) among others. Kalanga speakers are found in the Bulilimamangwe and Matobo districts in Matebeleland South province. Outside Zimbabwe they are also found in Botswana. The Kalanga in Bulilimamangwe are influenced by the Ndebele and the Tswana and are estimated to number over 158,000, although the total population in Zimbabwe is higher.

Figure 6. Distribution of ethnic groups in the Zimbabwean part of the Limpopo Basin.



Source: Hachipola 1998.

A HISTORIC OVERVIEW OF NATURAL RESOURCE GOVERNANCE REGIMES

The following section describes the evolution of indigenous natural resource governance structures and the factors that influenced this evolution over time. It is divided into four distinct time periods: pre-colonial period; colonial period; post-colonial era; and post cold war period.

Pre-colonial times

There is scant reliable information on most of the pre-colonial institutional structures in the basin. The first peoples to occupy the basin were San/Bushman hunter-gatherer clans. Permanent settlements were initiated with the influx of Bantu-speaking tribes from the northeast around AD 300 (Huffman 2000). One of the most important pre-colonial farming settlements in southern Africa, Mapungubwe, lies in the Limpopo Basin. This site is located in the north of South Africa close to the borders of both Botswana and Zimbabwe at the confluence of the Shashe and Limpopo rivers. At its peak, it was home to about 10,000 people and controlled about 30,000 km^2 of territory, making it southern Africa's first state (Huffman 2000). Mapungubwe was an important center of civilization in southern Africa and provides a useful site from which to derive an understanding of the culture of that portion of the Limpopo Basin. The remains of Bantu-speaking settlers in the Mapungubwe region have been dated to between AD 350 and AD 450, with evidence of pottery making and agricultural production (Huffman 2000). The identity of this Bantu-speaking group remains largely a mystery, but the Mapungubwe people were the first state-organized society southern Africa has known. Golden objects, ivory, beads (glass and gold) and clay figurines, as well as large amounts of potshards, were found at these sites and also appear in sites dating back to this phase of the Iron Age. The various groups which initially settled the area are known as the Zimbabwe culture. Their main settlements were Mapungubwe (from AD 1220 to 1290), Great Zimbabwe (AD 1290 to 1450) and Khami, near present day Bulawayo (AD 1450 to 1820). Settlements of the Zimbabwe culture were also situated in present-day southern Mozambique, where the settlement of Manekweni was a centre for cattle raising, agriculture and the gold trade between the twelfth and the eighteenth century (IIASA 2001). Related sub-groups settled in the Venda region of South Africa.

The climate of this period was warm and wet, conducive to production of sorghum and millet (Tyson and Lindesay 1992). From 600 to 900 AD the climate was drier coinciding with no farming communities reported in the area. By about AD 900 the climate became wetter again and the Zhizo people settled in the area. During the ensuing two centuries, various groupings of people developed, establishing trade links with the East African coast (Sofala, Bazaruto, Kilwa, etc.). Initially, those who settled in the area between about AD 1000 and AD 1100 relied on cattle for their wealth, with cultivation agriculture producing a subsistence level of food. However, once coastal trade patterns became established several groups, such as the K2 people and the Leokwe, became wealthy through trading gold, ivory and pottery (Huffman 2000). The scope of this paper does not permit an in-depth exploration of slavery, but anecdotal evidence suggests that the slave trade was also an important part of this economy and a determinant of power relationships between various groups in and outside the basin territory. As a result of this increase in wealth, in-group social stratification became more pronounced, leading to the stratification of Zimbabwe society into two groups: nobles and commoners (Huffman 2000). These two groups had different rights, duties and behavior patterns. The higher class "nobles" controlled access to resources.

This class distinction was legitimized by the concept of "sacred leadership" – the belief that there is a metaphysical relationship between the leader and the land. In the case of the Zimbabwe culture, sacred leadership was intertwined with "traditional" African deities and it was the deity who made it rain, or who made crops succeed or fail (Huffman 2000). The leader of the group had access to the deity through a hierarchy of ancestors. For example, the Kalanga people in Zimbabwe had rain-gods who provided them with rains. The provision and control of rains was a tool that enhanced the status of ruling lineages among the Kalanga (Makamuri 1995).

Rain is reported (Makamuri 1995) to have come from four directions, each direction pointing to a rain god. These gods occasionally fought, resulting in droughts. Water resources among the Kalanga were also guarded by animal water guardians, e.g., mermaids, particular fish types and snakes. This ordering of the universe is different from rainmaking amongst other Bantu speaking cultures in southern Africa. For example, the Nguni see rainmakers as special "herbalists," not chiefs, a tradition of sacred leadership reiterated amongst the rain-queens. Thus, a noble leader's power was based, in part, on the claim that his or her ancestors would intervene to ensure the fertility of the land and its people. Rainmaking ceremonies would usually take place on steep-sided hills that were inaccessible to commoners. The ability of a leader to induce a deity to provide rain determined how powerful the leader was. Periods of climatic perturbation, such as drought would lead to changes in the political powerbase, with evidence emerging of population shifts from one site to another corresponding to changes in the climatic regime (Huffman 2000).

The stratified groups that formed part of the Zimbabwe culture resided in separate areas. The nobles generally occupied the higher ground, such as the hill of Mapungubwe, while the commoners settled on the plains on the superior agricultural land. This was because the nobles derived most of their income from trade, while the commoners were more reliant on agriculture and cattle for their livelihoods. Specific fields were set aside to generate resources for the capital (the central node of an "empire" such as Mapungubwe). Residents contributed to cultivating these fields as a tribute to the nobles, whilst, it seems from archaeological data, that further a field, land was cultivated for household subsistence. During wet periods the Shashe River would flood, making agriculture on its floodplains a possibility. The receding flood would leave fertile, moist soil in which various crops could be grown, in a similar pattern to that occurring along the banks of the Nile River (Huffman 2000). Typically, the commoners had access to the flooded plains, while the nobles relied on ground water wells for their fields, domestic use and cattle watering purposes. The demise of the Mapungubwe capital in AD 1290 and the movement of the Zimbabwe culture to the Great Zimbabwe site coincide with the end of the wet period of AD 900 to 1300.

The Great Zimbabwe state was an important center for Botswana, in that this is where one of the minor tribes of Botswana, the Kalanga, were first called by this name[6]. They later spread out across Zimbabwe and Botswana, in the western part of which some Kalanga descendents are known as Wumbe. Other Kalanga chiefdoms descended from groups of Sotho such as the Nswazwi and Chizwina. From 1200 – 1400 AD a number of powerful dynasties began to emerge among the Sotho in the western Transvaal, resulting in what were known as the Rolong chiefdoms. The Central Sotho dynasties (Tswana of Botswana) of the Hurutshe, Kwena and Kgatla were derived from the break-up of the Phofu dynasty in the Transvaal. This break-up was explained as a response to drought, which forced junior brothers to break away and migrate, after which they formed other chiefdoms. Evidence of farming activities among these groups show that in the beginning, farming

[6]Minor, in that the state recognizes the Tswana tribes while all others are 'minor,' although it is far from minor numerically and influentially.

expanded in small homesteads, each clustered around a cattle corral with a few larger settlements as evidence of chiefdoms. This later changed with the growth of larger states, often hostile to each other and competing for cattle wealth, subject populations, control of hunting and mineral tribute and trade. The Kwena and Hurutshe migrants founded the Ngwaketse chiefdom among the Khalagari-Rolong in southeastern Botswana. Some of the Kwena moved to the north of Botswana and formed the Ngwato state. Eastern Botswana was historically associated with the Khalagari (Kgalagadi) chiefdoms and culture, which was a Sotho speaking group whose prowess was in cattle raising and hunting rather than farming. In the Serowe area in east-central Botswana there was a thriving Toutswe farming culture whose prosperity was based on cattle herding.

Of particular relevance in the pre-colonial history of what is today the country of Zimbabwe (as opposed to the Zimbabwe culture described above), is the story of the Ndebele and Shona tribes. The area now occupied by the Ndebele (the Limpopo Basin) was once occupied by the Shona, who themselves had pushed out the original inhabitants. The original inhabitants of the area were non-Bantu groups such as the San and Khoi-Khoi. The Ndebele, leaving their original settlement area further south, due to the forceful expansion of the Zulu empire under Shaka, pushed the Shona up from the Southern part of present-day Zimbabwe and settled there. The Ndebele-Shona 'conflicts' are well documented, with the former being alleged to have vanquished the weak Shona. Beach (1994), an authority on pre-colonial Zimbabwe, says this was exaggerated and a myth for a number of reasons. First, there were Shona-speaking groups that lived among the Ndebele. Second, there are reports of counter-raids by the Shona on the Ndebele. The raids were sporadic and were very much determined by local needs. For example, the Ndebele raided the Shona for grain, women and young men. The grain was required to supplement their diet as the Ndebele were largely pastoralist. The women and young men were required for numerical growth of the tribe (young men would directly add to the number and women would bear children). The Shona in turn, would engage in counter-raids for the acquisition of cattle.

Third, there was active cooperation for purposes of trade (Beach 1994) as well as religious cooperation between the Shona and Ndebele. For example, the latter paid tribute to various spirit mediums of the Shona. In turn, the local overlord of the area, Nemakonde, also paid tribute to Lobengula, the Ndebele King who entered into a contract with the settlers, which resulted in land appropriation for the settlers. The Ndebele also had a cordial relationship with the great Chaminuka medium who lived near the Rozvi polity (Beach 1994). These show that the conflicts between the Shona and Ndebele were exaggerated and there were actually various forms of cooperation between the two, to the extent that they influenced each other's activities and probably cultures.

Despite this reality, the image of conflict was actually promoted. For example, some missionaries sought support for their missions to save the souls of the 'savage' Ndebele. Travelers used this to stress the wilderness of the country through which they traveled as a means to attract more people to join them. Settlers used this to justify their position in the country, i.e., to maintain peace between the tribes. The Ndebele perpetuated the myth in order to build up their military image. The Shona also contributed to this in order to gain the support of the settlers who had made themselves the 'saviors' of the Shona from the Ndebele. These events later spilled into the colonial regime.

The Colonial Era

The Colonial period in the Limpopo Basin can be characterized by contradictions and complexities and it is critical to state that:

(a) each basin state had a different colonial experience,

(b) colonization took place in different phases and at different times for each country,

(c) in some countries the traditional structures were decimated, whereas in others they were artificially elevated and even protected.

Colonization systematically imposed authoritarian principles on human settlements with strategic political systems that were engineered for rigidity and control. This phased process was one where borders were defined and people were divided into groups as the subjects of different colonial powers. Among other effects, these new arrangements signaled an end to resolving environmental, political, or demographic issues by migration. While carving out "spheres of influence" colonial powers entered into a wide range of agreements. These included agreements about how to manage water, access to water supply, allocation of flows, and border delimitation on water bodies (Heyns 1995). Traditional rural societies were affected in different ways, but importantly, natural resource management functions that had been controlled by rural communities themselves were consequently controlled and administered from regional capitals rather than from local villages. Because authority was subverted outside of local spheres of governance, traditional structures and powers were weakened and became subservient to the political goals of the colonial administration.

Colonial borders defined modern independent states after the colonial period. The South African portion of the basin was defined by the Zuid-Afrikaanse Republiek (ZAR), which existed as a sovereign state from 1854 to 1910, and by the Union of South Africa from 1910 to 1961. The Zimbabwean portion of the basin was defined by the original borders of the Federation of Northern and Southern Rhodesia and Nyasaland. The Mozambican portion was defined by the Portuguese colony of Mozambique. Botswana was never a colony (it was a British Protectorate) and this has resulted in greater retention of traditional systems. Different colonial experiences and their impact on traditional natural resource management structures become clear when looking at it from a country-specific perspective.

1. Botswana (1885-1966)

Increasing trade in ivory and ostrich feathers in Botswana (then Bechuanaland) attracted missionaries and Boer trekkers to the east of Botswana in the 1840s. With the scramble for Africa in the 1880s, the British tried to keep their 'missionary road' through Botswana to present day Zimbabwe open to enable them to expand their activities. They did this by proclaiming Botswana a British protectorate in 1885, thus keeping the Boers out. This declaration did not go unopposed however. The leading Tswana chiefs in the country separately sent messages to the Queen of England to the effect that they wished to rule in their areas without subscribing to British law, as shown by one such message:

I Sechele, son of Motswasele, Chief of the Bakwena, having with me my sons and younger brothers, have heard the message concerning the protection of the Queen of England and give thanks for it. Concerning the laws which shall be established in the country, I say I wish to rule among my people according to custom, but I give the Queen to rule among white people, wherever they are (Tlou and Campbell 1984: 209).

Some chiefs opposed the idea of Botswana as a protectorate because they did not see against whom they needed to be protected and saw no need for it. To them it meant their country was being taken away from them. In addition, they had seen that Tswana were being badly treated by the British, who had taken some of the Batswana land (Tlou and Campbell 1984). The chiefs therefore mistrusted this development and the territory remained divided into eight largely self-administering tribal reserves, each under the rule of a *Kgosi* (Chief). Therefore, the coming of the British did not result in as much change in traditional institutions as it might have.

As a dry country with little promise of exploitable resources, the British saw no need to colonize Botswana. Instead, they hoped to hand it over to the British South Africa Company (BSAC), which was responsible for British expansion activities in Africa. Again, the leading Tswana chiefs opposed this and Botswana continued as a British protectorate. The British hoped to eventually hand the territory over and make it an extension of either Rhodesia or South Africa. Therefore, its administrative capital remained at Mafikeng in South Africa outside Botswana's borders.

There is very little record of the water history of Botswana, likely due to its dry ecology. Water resources were considered important mostly in relation to livestock rearing, the main livelihood activity for most of the tribes. Drilling for water began on a large scale in the early days of the Protectorate by both the colonial government and the *Dikgosi* (Chiefs). However, these efforts were mainly concentrated in large villages. Fees were charged for using this water and individuals were encouraged to drill their own boreholes. Those who drilled their own boreholes were allowed to use the water for themselves without having to share, as was necessary with open water sources (Tlou and Campbell 1984). Laws prohibited drilling boreholes close to each other to protect grazing land. Among the Bakgatla (one of the eight Tswana tribes), syndicates were formed that were responsible for buying and drilling boreholes for exclusive use of members of the group (Tlou and Campbell 1984). The 'colonial' government became increasingly involved in water development after realizing that the boreholes that had been drilled were unable to provide sufficient water for the villages and towns. This led to the construction of dams to improve water supply, illustrating the colonial government's active involvement in developing water supply infrastructure.

In 1966, the Republic of Botswana became independent with Seretse Khama, from the Bangwato tribe, as its first president. State intervention in water management increased in an effort to expand access in the semi-arid country.

2. Mozambique (c. 1880 – 1975)

Although the Portuguese arrived in East Africa during the 1400s, their activity in present-day Mozambique centered on the coastal trading posts of Lourenco Marques, Inhambane and Ilha de Mozambique while much of the inland remained independent until 1914 (Bergstrand 2003). The formal administrative hierarchy of the Portuguese colonial empire was initiated in 1934 by the "Reforma Administrativa Ultramarina (RAU)". This reform divided the colony of Mozambique

into “regulados” (kingdoms), each of which had a traditional leader, then called a “regulado[7]”. Regulados exercised administrative functions such as tax collection or supervising the construction of roads and wells on behalf of the colonial government (Bergstrand 2003). This made the “regulados” an important part of the colonial “indirect rule” structure. Given this importance the colonial government would intervene in succession decisions in order to ensure that the “regulados” in power would not disobey orders or cause resistance. The intervention of the colonial government shifted traditional leaders’ responsibility from serving their communities to serving the (colonial) state, which substantially undermined their perceived legitimacy among their communities (Bergstrand 2003). This close linkage modified chieftaincy structures. The colonial state also influenced FRELIMO’s stance towards traditional leadership after independence and was one of the reasons for replacing traditional leadership structures with alternative governance structures (see description under post-colonial below).

According to Anstey (2001), natural resource use in colonial Mozambique was governed by formal state legislation but enforcement of this legislation was limited due to weak administrative structures. It can therefore be concluded that whatever customary water management arrangements that existed at that time may have continued parallel to the formal state legislation. However, available research material focuses on traditional natural resource governance systems in the north of present-day Mozambique, while little information is available on natural resource governance regimes in Mozambique’s south, including the Limpopo Basin area. Verification of the above conclusion can, therefore, only be achieved through further research on the matter in the Limpopo Basin area itself.

3. South Africa

For South Africa, Turton et al. (2004) have defined at least four (but possibly more) phases of colonization. They suggest that the four phases coincided with periods of European settler movement and were accompanied by the migration of Africanized Europeans, who were starting to view their identity as being distinct from that of citizens living in European metropoles.

According to the definition of Turton et al. (2004) the colonization of present-day South Africa took place in four distinct so-called frontier phases:

- The **First Phase** of the Frontier had two distinct components. The first, from 1652 to 1834, saw the colonization of parts of South Africa. The second, from 1834 to 1900, included a significant event known as the Mfecane (Difaqane), the forceful expansion of the Zulu empire under Shaka, which coincided with a period of internecine strife that laid the hinterland of South Africa (including parts of the Limpopo Basin) to waste. The resulting relative absence of coherent social units in the hinterland made settlement by Africanizing Europeans possible. During this period, the Khoi-Khoi, original inhabitants of the area, were destroyed by disease attributed to initial European settlement.

[7] “Regulado” refers to the Territory and “Regulo”, the Ruler.

- The **Second Phase** of the Frontier (1834 to 1900) saw the influx of Boers into the hinterland of present day South Africa. The Boers were settlers of Dutch (and later also German and French Huguenot) origin, who gradually developed an "African" identity and viewed themselves as "African," from which the name Afrikaners, is derived. The inland move of these settlers was largely driven by three factors. First was their search for pastures, as they began largely as pastoralists. Second was the availability of largely unoccupied areas of land as a result of the Mfecane, and third, their desire to become independent from British colonial rule. Their inland move led to the establishment of the first two sovereign states in the region – the Orange Free State (OFS) and the Zuid-Afrikaanse Republiek (ZAR). Significantly, these two states were established in terms of the core tenets of the Treaties of Westphalia and Osnabrück. This made them fundamentally different in nature from the previous kingdoms and social groupings found in Africa, as they were built on the European notion of state sovereignty. Prior to the Treaty of Westphalia, sovereignty was earned and was the sole preserve of the monarchies in Europe. These monarchies were linked through marriage and this gave rise to the notion that sovereign states were only those that were recognized by these "families." Arising from this was the notion of recognition as a fundamental component of sovereignty. Once the Treaty of Westphalia was signed, it codified the notion of sovereignty and gave rise to a new world order with sovereignty as its foundation. The OFS and ZAR were the first states in Africa that existed in terms of the Westphalian State System, i.e., as independent states based on the notion of sovereignty.

- The **Third Phase** of the Frontier was characterized by two distinct economic activities: capitalism and subsistence farming. As Giliomee (1981) and Turton et al. (2004) note, the so-called burgher right entitled each citizen to two farms, resulting in permanent land settlements in the Boer Republics. The historic Cattle Killing Delusion (1857) punctuated this period of history. The Xhosa, in the then Transkei, experienced severe hardship after a series of droughts, paying cattle for reparation after losing previous wars and losing large numbers of the remaining cattle to lung sickness. In 1857, the (would-be) prophets Sifuba-Sibanzi (the Broad-Chested One) and Napakade (the Eternal One) "appeared" to a young girl named Nongqawuse, near the Gxarha River. They told her that if the Xhosas slaughtered all their cattle, burnt all their grain and destroy their pots, only then would their land return to its original health. They also promised that, should the Xhosa do this, they would come back with larger herds of cattle, they would have enough grain and the whites would disappear. Thus, everything would return to normal. The Xhosa heeded this prophecy and about 90 percent of them slaughtered their cattle (nearly 20,000 head) and destroyed their grain (Turton et al. 2004). On 17 February 1857, the Xhosa waited for the fulfillment of the prophecy. However, nothing happened, and thus, Nongqawuse heralded a mass suicide of the Xhosa. Forty thousand died of starvation. Around the same number of Xhosa left their land to seek work in the Cape Colony. The colonial government took advantage of the situation and forced the Xhosa into wage labor (Turton et al. 2004). Some commentators (Turton et al. 2004) trace the destruction of traditional Xhosa society to this event, because it resulted in Xhosa citizens becoming laborers for the first time.

- The **Fourth** Phase of the Frontier occurred as a result of the discovery of diamonds (1867) and gold (1886). These discoveries attracted the interest of Britain, resulting in events such as the Jamieson Raid and the South African Anglo-Boer War and culminating in the establishment of the Union of South Africa as a British colony in 1910 (until independence in 1961).

These developments changed the role of traditional leadership within the colonial governance framework. The policy of the Cape Colony was to eliminate traditional government, because at the time, chiefs were believed to be the main obstacle to Britain's civilizing mission (Bennett 2004). A completely different strategy was pursued by the colonial administration of Natal (driven by Lord Shepstone), where chiefs were given governmental and judicial powers. At the same time, the (British) Lieutenant Governor was deemed "Supreme Chief of the African people," which meant that the colonial government could rule African subjects by executive decree, rather than the normal legislative process (Bennett 2004). This regime was also imposed on the Transvaal (which includes the Limpopo Basin area) during the short period of British rule from 1877 to 1881, and was retained after the retrocession (the restoration of independence from Britain for the Transvaal Republic after the Boers defeated British troops at Majuba) (Bennett 2004). As has been mentioned above, the system of *indirect rule changed the authority and* nature of traditional rule substantially. Traditional leaders became functionaries of the colonial administration and derived their power and authority from this administration. The effect of this was that they assumed a sense of accountability upwards rather than to their subjects (Bennett 2004) and, the legitimacy of their rule was undermined.

In 1894, a council system was introduced by the government of the Cape Colony (later extended to the Transkei) that formed the model for future local governments in rural areas (Bennett 2004). Local and district councils were created, whose members consisted mainly of traditional leaders appointed to the councils by the Cape Governor. In 1909, the control of "native affairs" was vested in the Governor-General and a Department of Native Affairs was established. In 1920, the Native Affairs Act was passed, which extended the council system nationwide (that is to the Union of South Africa established in 1910). The councils set up under this system had to perform all duties in the rural areas that elsewhere were performed by municipalities, including the provision of water supplies and sanitation. As most councils were not capable of handling the extensive duties, the system faltered within a decade (Bennett 2004). This coincided with a change in policy by the central government that envisaged the "retribalization" of Africans as part of the rule and divide strategy. This policy was also motivated, as Vail (1989) notes, by the observation that African leaders could be used far more cheaply than the employment of expensive European officials (Vail 1989: 9). A 1927 amendment of the Native Affairs Act gave chiefs civil jurisdiction over disputes arising within their areas and also created the Governor General Supreme Chief. Acting through the Department of Native Affairs, the Governor General Supreme Chief had full authority to divide and create tribes and to appoint any person he chose as a chief or headman (Bennett 2004). This compliance of traditional leaders with state policy created a cadre of subdued traditional leaders who were discouraged from taking decisions or initiatives themselves.

The council system was formally abolished by the Bantu Authorities Act of 1951, which significantly enhanced the status of chiefs. Chiefs, the lowest level of a three tier authority consisting of tribal, regional and territorial authorities, were responsible for administering the general affairs of the tribe and for advising and assisting the government (Bennett 2004). This system disrupted traditional systems of governance and laid the foundation for the relationship between traditional leaders and the Apartheid government after South Africa's independence from Britain in 1961.

During this time, many traditional leaders became the instruments of the Apartheid government for governing the population in the so-called independent homelands. In 1959, the Promotion of Bantu Self-Government Act created eight (later nine) national units, based on the reserves established under the 1913 Land Act, which were designated "national homelands" and fell under the jurisdiction of "territorial authorities". This policy continued until 1994.

One can speculate that the developments and legal and political systems, illustrated above, had an impact on natural resource management and water resource management in particular. Yet, little is known about the relationship between traditional water governance structures and the statutory water management regime(s) of the colonial government.

According to Tewari (2001), for quite some time the (European) settler community and the native communities ran as separate entities without control over the other. This resulted in a dual system of land ownership and as a result, a dual system of water rights developed (ibid). On one hand the settler community established and aligned itself increasingly in commercial terms, while on the other hand the native community was subsistence inclined and had ownership of resources based on the chief's control without individual tenure (ibid). While indigenous water management practices were not codified in written form and were handed down from generation to generation by oral means, the government of the ZAR and the British colonial government promulgated a series of laws regulating water use and management. These laws dealt exclusively with the commercial use of water and thus excluded the indigenous population, which was engaged mainly in subsistence agriculture.

A key water user at the time was commercial agriculture, which directed water laws toward regulating water use for commercial farming, and in particular irrigation. In the Transvaal, the first law that laid down substantive rules for the use of public water was enacted in 1894 (Turton et al. 2004). This law defines a public stream as water flowing in a defined channel; the channel may contain water throughout the year or may be dry for any period. Private water, on the other hand, consists of a spring or stream, which is not of a permanent nature, not capable of subdivision, or having no defined course extending to a property adjoining that on which it originates (ibid). Regarding the use of public water, the law laid down the following provisions:

- A riparian owner is declared to be entitled to the reasonable use of the water of a public stream for household and agricultural purposes;
- He may lead the water out of the stream by means of furrows, and he may construct a weir in the channel to divert it;
- Where two persons want to use the same water and cannot agree the matter must go to arbitration, but if they both consent, they can have recourse to the courts;
- Water taken from a public stream must not be led beyond the boundaries of riparian land, and all furrows must be kept in proper order;
- The liability of a riparian proprietor for damages occasioned to lower riparian owners through his taking water from a public stream for domestic or agricultural purposes is limited to cases where (a) he takes more than half the flow when the stream forms the boundary between two or more farms, (b) he makes unreasonable use of the water he has taken out, or c) he wastes the water or uses it wrongfully (Hall 1939).

These principles depart from those of the Cape courts which were common law, i.e., exhaustive use for animal and domestic purposes and proportionate sharing for irrigation. This law was the first enactment in which priority of position is recognized as giving preference. It was also the first measure in which ordinary legal tribunals were excluded from jurisdiction in any disputes regarding water rights (Hall 1939).

Subsequent developments in the codification of water law in the Transvaal, including the Limpopo Basin, were strongly influenced by developments in the Cape Colony. The Cape Colony Irrigation Act of 1906 was mainly concerned with administration while regulation of irrigation and water rights was controlled by common law based upon Roman-Dutch law. This was the first comprehensive codification of the water law and applied only to the Cape Colony (Turton et al. 2004). The Transvaal followed this lead and adopted the general framework of the Cape Act. However, it made provision for central control of public water by an Irrigation Department (Hall and Burger 1957).

The first important law dealing with water rights after the formation of the Union of South Africa in 1910 was the Union Irrigation and Conservation of Water Act No. 8 of 1912. This Act provided for a national law regulating the use of water in public streams and effected a compromise between the water law in the north (Transvaal) and that of the south (Cape) (Turton et al. 2004). It kept the general framework of the Cape Act No.32 of 1906, yet its provisions were modified to embrace northern conditions (ibid).

Goldin (2005) notes, the 1912 Act provided special judicial machinery for defining water rights along public streams, settlement of disputes, granting of servitudes and permits and other matters. It also contained a number of provisions designed to promote the development of irrigation in the Union. The Act contained a complete codification of the South African Water Law. This law did not provide for any government control over public water resources. The allocation of water between riparian owners was the responsibility of Water Courts. The Department of Irrigation was established with the Director of Irrigation as its chief executive (ibid). Allocation of water resources by the Water Courts was expensive and the machinery of the courts were lacking in this respect. These courts were not able to allocate water resources, especially regarding those of large rivers, like the Orange, Limpopo, Inkomati and Maputo, nor did the courts have the necessary knowledge and information to deal with water disputes between citizens. Also, citizens could not supply the courts with the necessary knowledge and information. Therefore, there was an appeal for responsibility of allocation of public waters to be vested with the state. This was based on practical considerations and not on the interpretation of Roman and Roman-Dutch Law (Goldin 2005; Turton et al. 2004).

Administration of the Irrigation Act was placed in a special department, the Irrigation Department. This department stood under a Director of Irrigation with a staff of engineers and other administrative officers. Irrigation projects, settlements, and applications for loans were considered by this department. The services of government engineers in connection with irrigation projects were available and water boring for agricultural and stock farming was carried out by the Department (Turton et al. 2004). By the end of the 1920s, the activities of the Irrigation Department were expanded and included collection and assessment of hydrological and climatic data for the development of future irrigation projects (ibid).

In 1934, Parliament passed an amendment (Act 46 of 1934) to the Irrigation Act of 1912. This act suggested that protection of water in any area be left to the discretion of the government (Turton et al. 2004). The Act also stated that construction of large storage works within a protected area could only be carried out after permission had been obtained from the Minister of Irrigation. This granting of permission was at the discretion of the Minister. Only diversion and storage works

of a very small capacity in water protection areas did not need the permission of the Minister to be constructed (ibid). The Act also gave the government greater powers of expropriation for facilitating the construction of government irrigation schemes than it previously possessed.

Legal developments, as described above, make it clear that development of water law in South Africa, including the Limpopo Basin, were driven by the interest in developing and maintaining farmland for irrigation and commercial farming by white farmers. The water needs of the indigenous population were excluded from the statutory water management regime, which was heavily centered on commercial use, primarily agricultural use (Goldin 2005).

This situation did not significantly change after the promulgation of the Water Act No. 54 of 1956. The purpose of this Act was to consolidate and amend the laws pertaining to the control, conservation, and use of water for domestic, agricultural, urban, and industrial purposes (Turton et al. 2004). This increased the scope of water law in South Africa to such an extent that while riparian owners could still use the water resources on their private property, the state could also allocate water to industries and non-riparian users (ibid). This Law classified water resources into two categories: private and public water. Public water was further divided into two categories: normal streaming and surplus water (Hall and Burger 1957). The principles of South African Water Law had originated at a stage when industrial development in the country was limited in extent. Water allocations for industrial development therefore did not pose a great problem. The aim of the 1956 Water Act was to ensure that industrialists were allocated water for industrial development (Goldin 2005). Their intention was also to make provision for greater state control over the allocation of water and for the allocation of responsibilities to government to make water available to users, other than agriculture and domestic, and for the allocation to non-riparian users (ibid). These principles for greater state control over water were strengthened further by a number of amendments to the Water Act (Act 57 of 1957, Act 56 of 1961, Act 63 of 1963, Act 71 of 1956, Act 11 of 1966, Act 79 of 1967 and Act 7 of 1969) (Turton et al. 2004).

On an institutional level, the Irrigation Department was succeeded by the Department of Water Affairs. The focus of the new Department was no longer on irrigation alone, but was to secure fair allocation of water for all categories of water consumers (Goldin 2005). Yet, the law continued to prioritize commercial uses (agricultural and industrial) and thus, marginalized non-commercial uses of water, including and most importantly water use for subsistence farming and livestock watering as practiced by the majority of the indigenous rural population.

4. Zimbabwe

The status and role of traditional society changed dramatically during colonial rule that began in 1890 and ended in 1980. Before the colonial era there were different types of traditional leaders, from those exercising authority over a few villages to a paramount chief exercising authority over a wide area. Traditional leaders also played a religious role that included rain-making ceremonies. The sphere of influence of these leaders was acquired through conquest. In this regard, just before the arrival of European settlers in 1890, the Ndebele-speaking group was the most influential.

The conquest disrupted economic activities such as farming. The Southwest part of Zimbabwe, in which the Limpopo Basin is located, had a succession of Shona-speaking cultures and political units before the Ndebele arrived. These were primarily agriculturalists, although the environment favored cattle breeding (Beach 1994). Nevertheless, there was a viable traditional economy. Agriculture was successful to the extent that early European settlers, whose economic activities were centered on mining with little to no agricultural production, depended on the indigenous people

for their food needs (Herbst 1990: 13; cf. Manzungu and Machiridza 2005). The settlers are also recorded to have raided the cattle of the indigenous people (Beach 1994).

The arrival of European settlers was most significant for the appropriation of land from the natives. The settlers, wishing to expand the mining activities, started in the south and moved north in search of more mineral wealth. However, there were no minerals in the north, forcing the settlers to consider new economic pursuits for their survival. Realizing that the natives were successful in their agricultural activities, the settlers considered diverting into export agriculture activities. This depended on the appropriation of native lands for housing the settlers and for production purposes. In this process, the settlers set up systems to ensure the success of their agricultural activities. These included, in addition to land appropriation, control over access to water, control of native agricultural activities, the relocation of natives into reserves where their economic activities were monitored, and implementation of policies and legislation that supported the settlers. Such policy and legislation instruments included financial support for settlers only, debt adjustment measures and favorable market prices for settler produce. The favorable market prices for the settlers were achieved by taxing the natives to subsidize the settlers.

The conquest of the various indigenous groups changed the role of traditional society. The colonial state imposed a new system of local governance based on the notion of indirect rule and thereby compromised a governance system that was largely sustainable and had its own identity. This was done through centralization of resource use management for purposes of politically controlling the natives. The erosion of the economic base of the indigenous people, through activities such as the appropriation of land, resulted in the insecurity of communities who now had to rely on subsistence-farming.

The transformation of traditional institutions into state organs was another important characteristic of the colonial era. Various steps were taken to reduce the influence of the native institutions and their leaders in an effort to consolidate settler power and thus achieve political, economic and social control. This was done through the control of economic drivers such as access to land and water. Manzungu and Machiridza (2005) describe the policy and legislative mechanisms that were employed by the colonial state to affect this. For example, three major water laws were passed which had the effect of limiting access to water by the indigenous population. The 1927 Water Act attached water rights to land rights where the natives had no rights to land following land appropriation by the settlers. The natives were placed in reserves where rights to land were registered with the Communal Area Bodies, so that they could only apply for a water right as a community, and then the right was held by the District Administrator or Minister of Water Development on behalf of the community. The 1947 Water Amendment Act focused on the definitions of public and private water following new commercial interests of the settlers, including issues like fish farming and *vlei* (*dambos* [seasonally flooded wetlands] or wetlands in depressions) cultivation. Through the Natural Resources Act of 1941, native initiatives in agricultural production were thwarted on the basis that their activities, which included furrow irrigation, wetland cultivation (regardless of the fact that this had earlier been accepted as a new and viable economic activity for the settlers) and shifting cultivation among others, were detrimental to the environment. The 1976 Water Act perpetuated the 1927 principle of water rights being attached to rights to land so that the indigenous population was still disadvantaged in terms of access to water.

In terms of the role of traditional authority in water management, two developments occurred. First, access to and management of water were centralized with the establishment of Water Courts, which were responsible for issuing water rights and settling disputes. This in turn led to the second development: the role of traditional leaders was undermined because people had to seek the

intervention of the Water Court in all water related issues. The colonial state therefore disregarded the fact that the natives had their own systems for water management, especially for irrigation furrows that they had dug. In fact, the colonial state took over the management of these 'informal' irrigation furrows.

Post-colonial Era

Independence for African countries signaled a shift in the political relationship between governments and the traditional authorities, generally resulting in the further centralization of powers to the national government away from the traditional authorities. These developments took place at different times in the respective countries, as they became independent at different times.

1. Botswana

The combined efforts of the 'colonial' government and traditional leadership to drill boreholes with the common purpose of providing water for the inhabitants of the land and for watering livestock (an important livelihood activity for natives and the settlers), encouraged good working relations between the state and traditional leadership. Traditional leadership structures have therefore almost remained intact because the early *dikgosi* resisted the erosion of their power by the British. However, the post-'colonial' government has somewhat changed the role of traditional leadership in an effort to improve water supply.

The Tribal Land Act of 1970 and Water Act of 1968 transferred land and water administrative powers from traditional leaders to Land and Water Apportionment Boards, respectively. Today, it is the Water Apportionment Board (WAB) who is the responsible agent for granting rights to water and managing any issues relating to water. Once again, the role of traditional leaders has been eroded. Individuals are still permitted to drill boreholes on their private properties without seeking a right to do so. Under the 1968 Water Act, the WAB can revoke water rights that are not utilized by the holders of the rights. This situation, as happened in Zimbabwe during the colonial period, centralizes water management under the overall control of the state to the effect that traditional leadership is sidelined.

In 1974, the government established a policy through which the Ministry of Agriculture (MoA) could rehabilitate and build small earth dams and provide productive water for livestock watering, irrigation and fishing to many of the rural poor, especially in the Limpopo Basin. The policy intended to devolve greater water resources management to syndicate dam users in order to foster ownership and sustainability reminiscent of pre-colonial times. Some of the dams date to 1914, having been built and maintained by indigenous communities before giving way to the now ubiquitous centralized management approach. However, the Small Dams Project has been characterized by mismanagement and inadequate control regarding use of the water by farmers (Ministry of Agriculture 2003). In addition, related issues such as maintenance of dam infrastructure, water rights and duties are still unclear for most dam groups. These problems have affected the use and maintenance of these water resources and pose threats to rural village food security and overall poverty alleviation.

2. Mozambique

After independence from Portugal in 1975, Mozambique saw a fundamental shift in the approach to the involvement of traditional leadership structures in governance issues. Guided by its Marxist principles, the post-independence government attempted to eliminate traditional authorities as they were seen as representing feudal governance structures incompatible with the ideals of a socialist society. In the eyes of FRELIMO (the then governing, and only officially allowed party), this view was confirmed by the close linkage of traditional authorities with the colonial government. The FRELIMO government embarked on replacing traditional leadership via the creation of party and state administration structures (dynamizing groups, village secretaries). In line with socialist policies, natural resources such as land were nationalized and the state legislation dealing with natural resource use expanded while implementation remained limited due to capacity problems. The establishment of the new structures remained generally limited. The ongoing civil conflict, but even more so deeply rooted allegiances to traditional leaders, prevented the implementation of the "revolutionary" structures. According to interviews held by Bergstrand (2003), village secretaries were not perceived as legitimate leaders, as they had no relation to traditional structures and customs and enjoyed very little respect. This resulted in the increased use of force by the FRELIMO government to make people obey the orders of the village secretaries (Bergstrand 2003), thereby further undermining the authority and perceived legitimacy of the "revolutionary" structures. As a result of the imposition of a "modern administrative system" the people increasingly turned towards the institution they saw representing their own culture, traditional leaders (Bergstrand 2003), despite the corruption of the traditional structures by the colonial government.

FRELIMO's stance towards traditional leaders was used by RENAMO as a core strategy in the civil war. In order to gain the support of rural communities, the revival of traditional structures and religions and the "liberation of oppressed traditional leaders from Marxist control" became a key element of RENAMO's war strategy. Although a Mozambican government official (DNA 2005) alleged in an interview with one of the authors that this resulted from opportunistic deliberations rather than respect for the value of traditional structures, it was noted that RENAMO-controlled areas had a vibrant traditional leadership structure. This legacy could prove to be beneficial for the involvement of traditional structures in natural resource governance, given the recent shift by the Mozambique government towards greater involvement of traditional, local structures in the overall governance framework (see post cold war section below).

3. South Africa

As far as the role of traditional leaders and customary rules in South Africa is concerned, the period after formal independence (1961) saw a continuation of the policies established previously. The Bantu Homelands Constitution Act of 1971 gave the President power to create legislative assemblies for areas with an established territorial authority, which could in turn be transformed into fully self-governing territories (Bennett 2004). By this means, the Transkei, Bophuthatswana, Venda and Ciskei were granted "independence" (though not formally recognized internationally) between 1976 and 1981. Chiefs occupied half the seats in the homeland legislative assemblies (Bennett 2004). As these were often largely dependant on national government for resources, the Apartheid government continued to have great *de facto* control of these authorities. This was used politically by the South African government as supporters of Apartheid (within the traditional authorities) were well placed to benefit from the development of homeland governments (Bennett 2004). Hence, whilst officially promoting a strong role for traditional governance structures, these

structures were to a large extent manipulated to suit the needs of the South African government. The establishment of homeland governments has impacted negatively on the credibility of traditional leadership in many areas and undermined the efficiency of those traditional governance systems. Ten years into the South African democracy, this remains one of the factors contributing to the difficulties in defining the nature and role of traditional governance systems.

4. Zimbabwe

In Zimbabwe, the post-colonial era (1980 – 1990) continued the uneasy relationship between the traditional system and the government. This is reflected by the nature of the authority that is accorded to Chiefs. Traditional leaders continued to play an important role in rural communities, particularly in natural resource management despite being undermined by colonial and post-colonial administrations.

In the first years of independence, the state was suspicious of traditional leaders because of their alleged collusion with the oppressive colonial administration. For example, their judicial powers were transferred to popularly elected court officials. Despite their official sidelining, traditional leaders retained a great deal of legitimacy among their subjects. For example, they were still permitted to take part in land allocation decisions where land was left to them to decide how to distribute to their subjects. This was different from water however, in that their role in water management was never specified. They participated in water-related issues in the execution of their other duties, not because they had a mandate for managing water. The judicial powers of traditional leaders were later restored after 1995 following the realization that traditional leaders were influential in the politics of the village. The restoration of their powers was therefore more of a political than a management decision.

Following independence, the new government tried to address the 'colonial injustices' that were negatively impacting the natives. One of the expectations was the redistribution of land and re-orienting economic drivers to include the previously excluded natives as beneficiaries. However, in terms of water management, not much changed. Water management continued under the Water Act with its adverse consequences for the natives. The 1976 Water Act continued the concept of (i) rights to water being linked to rights to land, (ii) the priority date system and (iii) water rights issued in perpetuity. This meant that regardless of political independence, access to water was still as it was during the colonial period because rights to water were held by the settlers, and natives had no latitude to contest this state of affairs. It was not until the 1991/2 drought that efforts were made to revisit the Water Act of 1976 (Manzungu 2001).

The role of traditional leaders in water management was never specified, unlike their role in land issues. One area in which tradition has persisted is rain-making ceremonies. Conducted before the onset of the main rains, they are coordinated by traditional leaders who call upon their subordinates to contribute towards this ceremony. While the actual ceremony itself is conducted by a spirit medium, it is the traditional leaders who make it happen. The ceremonies tend to be ethnicity-based with each chief conducting his own ceremonies, creating a degree of variation between and among different communities. Hand in hand with the rainmaking ceremonies are a series of taboos that are meant to safeguard the environment. For example, washing clothes in rivers is generally prohibited. Another taboo which has survived time is one against indiscriminate cutting down of trees – and it is chiefs who generally give permission to cut down trees because of the legitimacy accorded to the traditional leaders, even though the legal rights are vested in a state-appointed board.

Recent Developments: 1990 to the Present

The end of the cold war fundamentally changed the balance of forces within the region. This laid the path open for the independence of Namibia in 1990, the signing of a peace treaty in Mozambique in 1992 and the election of a democratic government in South Africa in 1994.

International conventions on water resource management have significantly shaped the contemporary water discourses in southern Africa. In this respect, the Integrated Water Resources Management (IWRM) principles as enunciated by the International Conference on Water and Environment in Dublin have been the most significant. Manzungu (2004) argues that the current wave of water reforms in the region (see e.g., Malawi 2001; Mozambique 1995; Tanzania 2002; Zambia 1994; Zimbabwe 1998a, 1998b) can be attributed in part to this development. This raises questions about the compatibility of the reforms with those of the other countries in the region in general and to local water management in particular.

These reforms promote stakeholder participation, calling on a participatory approach in general and participation of women in particular (GWP-TAC 2000). In many cases there are legal and policy provisions for ensuring local participation in water management, although in reality no practical mechanisms have been put in place for achieving this. Legal provisions tend to exclude local traditional institutions in favor of what are called democratic institutions, which in many cases are artificial. In the end, regardless of what changes take place people still subscribe to their local traditional leadership in most aspects of their lives.

It is also important to highlight the fact that the southern African region is perhaps the only region in the world where there has been a concerted effort to have in place a regional approach to water resource management. Cooperation within the framework of the Southern African Development Community (SADC), a regional economic grouping to which all the countries belong, is helping to popularize new management approaches (Green Cross International 2000). This is evidenced by the Protocol on Shared Water Courses in the SADC countries (SADC 1995; SADC 2000); the setting up of the SADC Water Sector Coordinating Unit in Maseru, Lesotho in 1996 (the precursor to the SADC Water Division now based in Gaborone, Botswana); as well as the production of the Regional Strategic Action Plan for IWRM for the period 1999 – 2004 (SADC Water Sector 1998) and the Southern African Water Vision (GWP – SATAC 2000). It is also significant that all the regional programs include a component of stakeholder participation. However, this remains to be operationalized to any meaningful degree. In fact, international water conventions are solely between state parties rendering the question of stakeholder participation somewhat suspect in this arena (Manzungu 2004).

The following paragraphs describe how the Limpopo Basin countries have tried to integrate IWRM and stakeholder participation within their legal and policy frameworks and how this relates to the role of traditional institutions in water management. Challenges that remain in this area, especially how to fashion an IWRM agenda that best suits local interests in terms of making productive water accessible to poor rural farmers, are also highlighted. This is of particular importance, because the framework for interstate cooperation such as the Limpopo Basin Commission currently has no provision for non-state actors, although the protocol does provide for stakeholder participation.

1. Botswana

Traditional leadership structures, including their role in indigenous water resources management in Botswana, are dwindling. Politicians have collectively agreed that in this era of democracy, there is no place for a traditional leader, and parliament is the only law-making body recognized by the Constitution. The debate about chieftainship vis-à-vis modern politics has become popular in recent years with more youthful heirs abandoning their traditional duties to join politics or find employment**.** While the institution of Chieftainship is recognized by the Constitution as an advisory body, Chiefs have become nothing more than quasi-judicial officers working for the Government and answerable to politicians (*Botswana Gazette,* Wednesday 11 August 2004).

There is thus an absence of intact local level traditional leadership in water management. This has been exacerbated by the prevailing water scarcity in the whole country along with the entrenched view of water as a social good. Since independence, the government of Botswana has centralized and subsidized water resources development, protection and management. However, on the whole, Botswana has taken few steps in modernizing water related law and policies.

2. Mozambique

Since the 1992 end of the civil war in Mozambique and the election of a democratic government, there has been a more favorable stance towards traditional governance structures. State institutions remain weak, particularly in rural areas, and there is varied influence of either customary or state administration, with a generally high suspicion towards either form of authority. New laws and policies have been adopted in an attempt to bring together customary structures, elected local structures and local state administration. The implications of the new policies, however, remain unclear and relations between the different structures are often problematic. According to DNA (2005), the Mozambican government has recognised this problem and is in the process of promoting legislation that will set out the rights and responsibilities of traditional leaders. According to the same source (DNA 2005), there is an effort within the government to involve traditional and local governance structures more in decision making at the national level. According to Bergstrand (2003), it can be debated whether these initiatives are not part of FRELIMO's strategy to gain political control over rural areas, where its support is currently weak. Nevertheless, there seems to be evidence that greater involvement of traditional leaders and recognition of traditional governance structures, including those dealing with natural resource management, is being promoted by the Mozambican government.

An important piece of legislation in this context is Decree 15/2000, 20 June, which recognizes the role of community authorities in controlling natural resources. Community authorities are characterized as "traditional chiefs, village secretaries and other leaders recognised as such by their respective local communities" (Ribeiro 2001). Hence, whilst including other forms of governance at the local level, the decree paves the way for the involvement of traditional leadership in resource management.

Decree 15/2000 is in line with the objectives of the National Water Policy of 1995, which states that the use of the resource is facilitated by the participation of beneficiaries and that the degree and form of participation will depend on the local conditions and the type of service needed (Section 2 (b)). Together with decree 15/2000 this may open the door for recognition of traditional water governance structures where local conditions favour such recognition. Whether this recognition is purely legal, born out of political strategy as questioned by Bergstrand (2003), or will indeed be

implemented and become part of the wider natural resource management framework, remains to be seen.

Although extensive fieldwork would be needed to provide accurate information on customary arrangements in the Limpopo Basin, Ibraimo's 1999 study on water law in Mozambique indicates that there are various customary water management arrangements in existence. These differ from province to province and even within provinces depending on the tradition and cultural values of the respective local communities (Ibraimo 1999). According to Ibraimo, customary law distinguished between private and community ownership, with water being considered as a community resource that everybody could use freely. While some basic principles of water-related customs are known, information on the exact nature of these remains scarce, leading Ibraimo (1999) to conclude that extensive field work by a multidisciplinary team of sociologists, anthropologists, environmentalists and lawyers is needed to fill this gap.

3. South Africa

After South Africa's transition to democracy in 1994 the country has seen the enactment of new water laws and of a new, comprehensive National Water Resource Strategy (2002). The latter is the general planning framework for the country's water resources in the future. The most important legal instruments governing water management and water service provision in South Africa are the National Water Act (No 36 of 1998) and the Water Services Act (Act 108 of 1997), respectively (Goldin 2005). The key player on the institutional level is the Department of Water Affairs and Forestry (DWAF). The DWAF is responsible for the implementation of the National Water Resource Strategy and various functions under the National Water Act and Water Services Act, such as for example, the administration of the new license system and the allocation of water. The provision of water services lies primarily within the responsibility of local municipalities, with the DWAF exercising an oversight function.

The DWAF is a national department with regional offices in all parts of the country. Internally, it is subdivided into various Directorates and Branches according to substantive issue areas. In line with the National Water Act, the country has been divided into 19 Water Management Areas (WMAs) and new institutions, Catchment Management Agencies (CMAs) are to be established as the designated authority of the catchment (Goldin 2005). Catchment Management Agencies are statutory bodies to be established under the National Water Act with jurisdiction in a defined water management area. A CMA therefore manages water resources and coordinates functions of other institutions involved in water related matters within WMAs. The CMAs are governed by a governing board, which must represent the relevant interests in a WMA and must have appropriate community, racial and gender representation *(ibid*).

At present, there is no explicit formal recognition of customary water management structures in the National Water Act and there are in practice no vehicles for integrating customary and statutory water management structures into a comprehensive water management system. This could, however, be possible within the given legal framework in South Africa. The role of traditional leadership and customary law has been re-defined in the new South African Constitution (Act 108 of 1996). Provisions that deal with traditional leadership can be found in Chapter 12, and Section 211 explicitly recognizes the institution, status and role of traditional leadership according to customary law (subject to the Constitution). Section 211 (2) stipulates that a traditional authority that observes a system of customary law may function "subject to any applicable legislation and customs, which includes amendments to, or repeal of, that legislation or those customs." Whilst recognizing the

institution of traditional leadership and the plurality of legal systems, this principle effectively establishes the superiority of statutory law over customary law. In other words, customary law is tolerated only when it does not contradict statutory law. Furthermore, the legislature is entitled to repeal existing customary law, amend it or replace it by statutory legislation. It is therefore possible that ongoing legislative activity will, over time, restrict and inhibit customary law, curtailing the influence of traditional leaders in the process. Thus, while traditional leadership as an institution is protected by the South African Constitution, the degree to which traditional leadership will play a role in the overall governance system in the future remains in doubt.

What this means for the relationship between customary water management arrangements and statutory law in South Africa has been explored by Malzbender et al. (2005). They conclude that, although the National Water Act of 1998 does not explicitly recognize traditional water governance structures, there is room for the recognition and integration of these structures into the overall water governance framework. Arguments for this are derived from the policy papers that guide the interpretation of the National Water Act, namely the Implementation Policy for Catchment Management and the White Paper on Traditional Leadership, which according to Malzbender et al. (2005) potentially provide vehicles for effective cooperation between traditional and statutory water governance structures.

4. Zimbabwe

Due in part to their continuing legitimacy and because of the potential of the leaders being political allies to the ruling parties, the power of traditional leaders was retained after the first decade of independence. The Traditional Leaders Act (Zimbabwe 1998) gives traditional leaders room to take leadership in all development aspects through their participation in development committees and councils.

It is important to note that traditional leaders have powers to preside over customary law and local courts in civil cases (Zimbabwe 1998)[8]. According to the Traditional Leader's Act [Chapter 29:17] (Zimbabwe 1998), the Chiefs have the responsibility for:

- Over-seeing collection of levies, taxes, rates and charges by village heads, payable in terms of the Rural District Councils Act.

- Ensuring that the land and its natural resources are used and exploited according to the law, in particular in controlling over-cultivation, over-grazing, indiscriminate destruction of flora and fauna, illegal settlements and degradation, abuse or misuse of land and natural resources.

- Resolving disputes relating to land and customary law in their area.

The Headmen are responsible for executing these on behalf of the Chief while the Headmen in turn can pass on some of these responsibilities to the Village Heads.

[8]The hierarchy of traditional leaders from the top is Chiefs, Headmen and Village heads.

Water reforms have taken place in Zimbabwe resulting in two new pieces of water legislation, the Water Act (1998) and ZINWA Act (1998). Under the Water Act, the country was divided into 7 catchments based on hydrological boundaries. Each of these catchments was further divided into sub-catchments. Catchment and Sub-Catchment Councils (CCs and SCCs) were established for managing water resources in these areas, respectively. The CCs are made up of elected members of the SCCs[9]. Focus has been on the effectiveness of these councils and it is acknowledged that they are facing various limitations. Many councilors were voted into their respective councils with little or no background in managing water or the objectives of the water reform process, resulting in ignorance of what they were expected to do (Latham 2002). Decision making, therefore, has tended to be dominated by the large-scale commercial farmers who had previous knowledge of managing water (ibid).

One factor limiting effectiveness of the councils is that water users do not consider the councils relevant, because these new structures are based on hydrological boundaries while users tend to relate more to political-administrative boundaries. This is compounded by the fact that traditional authority systems tend to be strong forces in resource management and local-level decision making (Swatuk 2002). In addition, people tend to respect their indigenous/traditional institutions more than the formal state institutions and they subscribe to them for all issues of their lives, of which water is one. Manzungu (2002), therefore, postulates the concept of Integrated Catchment Management (ICM) rather than IWRM, as this caters for the management of the environment surrounding and supporting the livelihoods of people.

Members of CCs and SCCs have expressed the need for clear boundaries including jurisdictional boundaries, i.e., what is their authority and how do they work with other authorities such as Rural District Councils (RDCs). Another problem for the councils is that their roles have not been clearly defined, making it even more difficult for them to effectively manage water resources. According to Swatuk (2002), the role of the catchment manager can be contentious because while supposedly serving the needs of the locals in the catchment, the manager has to report to ZINWA, a state institution, rather than to the CC and SCCs as stakeholder organizations. Therefore, they are far from being autonomous because the state is always looking over their shoulders. This could be another reason why water users tend to subscribe to the traditional over the new water management institutions.

Another emerging issue is that of primary water use. Primary water use is not clearly defined, which can result in different people employing different normative frameworks in addressing primary water use. Primary water use is also not quantified in the new Water Act (Zimbabwe 1998a). In some cases, activities such as family vegetable gardens have been labeled as secondary water use, if vegetables produced in the garden are sold. This is on the basis that primary water uses are for non-commercial activities. However, these gardens are not for 'commercial purposes', but are primarily for household consumption. In the colonial era, primary water use was set at 50 gallons per capita (228 liters by British standards). Presently, the determination of quantities of primary water use is left to the discretion of the CCs. This means that the rights of some communities can be infringed upon (Manzungu and Machiridza 2005), including corrupt practices in water allocation.

The riparian principle, in use in the colonial period, which guaranteed access rights to those communities adjacent to a river for non-commercial water use, is no longer recognized. After independence, the riparian principle enabled smallholder farmers to engage in small gardens for food production and income generation, but this was expunged from the new Water Act. This

[9]The Limpopo Basin, on the Zimbabwean side, lies in the Mzingwane catchment, which is sometimes referred to as the Limpopo Catchment.

exposes farmers to ponderous and expensive regulatory requirements and calls into question the government's ability to control the activities of smallholders in this area. Other reforms instituted include the Water Resources Management strategy and the Multi-stakeholder Platforms Strategy in Water Resources Management.

TRANSBOUNDARY INTERACTIONS BETWEEN BASIN COMMUNITIES

What is evident from the research to date is that historic tribal groupings can be divided by present-day international boundaries. In various parts of Africa the predominant state formation vehicle was colonization by the European powers. Territories were delineated, either in the capitals of Europe (with the Berlin conference of 1885 being the starting point of what was later referred to as the "Scramble for Africa") or on the battlefield in Africa. The states that emerged through this process were formally recognized by the inaugural meeting of the Organization of African Unity (OAU) in 1964, where a decision was taken not to change any of the existing borders. The result is that countries in Africa are, to a greater degree than other parts of the world, an amalgamation of various disparate population groups. Some commentators (Buzan 1991) refer to this nuance in terms of a 'state-nation', in which the state borders were determined before nationhood was established, as opposed to the 'nation-state' in which nationhood preceded statehood.

Of particular relevance to this paper is the fact that southern African rivers were often arbitrarily chosen by colonial governments to serve as borders between their respective territories. Due to the predominantly arid climate and low rainfall to runoff ratios of the region (O'Keeffe et al. 1992), most rivers have relatively small average annual flows with high levels of natural variability. Where a river may present an obstacle in many parts of the world, forming a natural barrier, the rivers of southern Africa have the potential to draw people together instead. Large rivers are well suited to navigational uses and small rivers allow the movement of people and goods across them, encouraging access to resources in another part of the region. Over time different groups of people settle on either bank of the river and start interacting with groups on the opposite bank. Integration between groups slowly takes place because customs, beliefs and languages are shared over time. The coexistence of the groups on opposing banks of a river is often characterized by frequent interaction, either in the form of trade, access to resources, religious ceremonies or social events such as weddings and funerals. The legacy of this cross-border interaction is that communities often feel that they have more in common with people on the opposing bank of the river, albeit in another country, than they do with their fellow-citizens in the capital city.

This situation has been observed by Turton and Earle (2003) on field visits to the Okavango, Zambezi and the Chobe river basins. While accompanying a traditional leader from the Kwando/Cubango province of Angola on a visit to Rundu in the Kavango region of Namibia, it was noted that he spoke the same language as the community he met with. This occurred notwithstanding the fact that the Angolan traditional leader comes from the town of Menongue, about 300 km north of Rundu, deep inside Angolan territory. Both towns are in the Okavango basin. In Botswana, the villages in the Chobe enclave have a Kgosi (Chief) related to the Hompa (Chief) across the Chobe River in Namibia, with the two chiefs sharing the surname of *Sim(n)vula* (pers comm. Masule 2004).

An example of transboundary interactions between basin communities in the Limpopo Basin is observed between Botswana and Zimbabwe. Due to internal strife some of the Kalanga in Botswana were forced to flee back into Zimbabwe. They returned with their Chief and settled in their original home, Jetjeni, which is in the Bulilimamangwe District in southern Zimbabwe. In 1959, this exiled group in Zimbabwe negotiated with the Zimbabwean and Botswana governments for repatriation, and this was granted. The Chief however did not manage to go back with those who were repatriated and he eventually died in Zimbabwe in 1960. In 2003, his remains were exhumed for reburial in Botswana, where-upon some of the Botswana-Kalanga who were still in Zimbabwe decided to go back to Botswana with their Chief. However, while the Kalanga were repatriated, they probably have very little in common with the Kalanga in Botswana now, making cooperation between these groups potentially difficult. Instead, there could be potential cooperation of the Kalanga groups on either side of the border because of a common culture. In principle, one could argue that transboundary co-operation between communities is likely to occur where there are shared meanings, for example a common culture rather than merely sharing geographical space.

From the time that the Bakanswazwi were permitted to return to Botswana, transboundary interactions were common as these people visited their families across the border. To date, these interactions continue among those who remained behind in Zimbabwe when the remains of the Chief were taken back to Botswana and those who retuned to Botswana with the remains.

THE INTERFACE BETWEEN CUSTOMARY RULES AND CONSTITUTIONAL VALUES

The following examples illustrate relationships between customary rules and constitutional values and statutory law.

Gender roles

Hemson (2004) in his paper '*Women are weak when they are amongst men*' examines the gender aspects of water delivery and the participation of women in managing water supplies. He locates the role of women within a broader framework of subordination and powerlessness in rural areas in particular, noting that women access land through their husbands and not in their own right. Hemson's (2004) point is that this has serious implications for post-colonial management systems because, despite constitutional laws to the contrary, men remain key stakeholders where traditional authority has been retained. Hemson (2004) observes that traditional authorities still retain control and that centralized approaches do little to loosen the hold of the traditional over the 'modern'. Hemson (2004) makes the point that the retention of traditional authority does not necessarily have positive effects on all groups, in particular on women.

The dominant role of men does not mean that women are in all cases subordinate. There are examples of extended power imbued in individual females. In Zimbabwe and Mozambique for example, all spirit mediums are female and they are powerful within their traditional communities. Also in the South African part of the Limpopo Basin, female spirit mediums play a powerful role in traditional society. Their decision, for example, on who is a bad spirit, can even lead to the death of individuals.

Another example is the case of the late Rain Queen Modjadji (in South Africa), which reflects the power engendered in a woman, who has absolute sovereignty with a leadership role intimately

connected with her ability to invoke rain. This traditional role bestowed upon the Queen is operational today with rules and values that remained largely unchanged (although the adherence to this set of rules has recently been challenged by the current Modjadji herself). Further research would be necessary to understand the way in which the values that enshroud the Rain Queen coincide with the relationship between male authority figures and female authority figures in the region.

The position of individual females in traditional societies in the Limpopo Basin, however, does not reflect the position of women in these societies in general, including their hierarchical position in management of local water resources. Jha et al. (2004) note that it was men who assumed dominant roles in creating, cleaning and protecting water sources, although women (and boy and girl children) were the ones who fetched water for use in homesteads.

The dominant role of men in most traditional societies in the basin is at odds with the constitutional values of democratic states. The ability of traditional societies to integrate these "new" values will be part of the determination as to whether and how "traditional" and "modern" value systems can interact over time.

Traditional vs. statutory

The end of Apartheid in South Africa brought about a shift in traditional governance. Today, ten years into democracy, both customary and statutory tenure influence the way in which water and land is managed in South Africa.

There is tension between past and present because modern statutory laws do not yet articulate smoothly with traditional norms and values, as the following example in the South African part of the basin illustrates. According to Badenhorst (2004), the municipality of Tzaneen is confronted with nearly insurmountable infrastructure costs for water delivery due to the land allocation practices of traditional leaders. Under customary law traditional leaders have the right to allocate plots of communal land to individual community members. This has lead to the uncoordinated establishment of a large number of small-scale settlements within the jurisdictional area of the municipality without adherence to state-of-the-art town planning principles (Badenhorst 2004). The municipality is obliged, by statute, to supply water services to all residents in its area of jurisdiction, including the loosely spread settlements. The municipality therefore has to build and maintain an extensive network of water pipelines serving only a limited number of households and people. This has adverse effects on the municipal budget and undermines service delivery standards in other areas, as large amounts of revenue need to be allocated to water provision.

Another example of tensions between traditional and statutory rules was also observed in the South African part of the Limpopo Basin. Malzbender et al. (2005) reflect on the ambivalence that is part of everyday life for a government official working in the regional offices of the Department of Water Affairs and Forestry in the Limpopo Province. This official adheres to one set of rules and values proclaimed by the National Water Act (1998), as well as a traditional set of rules relating to organising water resources and water provision. The fact that this particular official supports a water management and supply scheme under traditional rule, which operates outside the framework of statutory law, emphasizes the tensions between traditional and statutory structures. However, while the particular official, aware of the statutory provisions, acknowledges the tensions between the two systems, this is viewed differently by the users in the village itself. Although the villagers are aware that water service provision is one of the functions of the government, they see their village's initiative as a means of complementing the government's efforts rather than as being in conflict with the statutory regime – hence as an alternative path to the same goal.

Furthermore, there is a subtle change in the way in which consumers perceive the same water sources today as they did during the Apartheid period. Today, in many parts of Limpopo Province, citizens tend to defer to state authority rather than to their own communities. Ownership of water and issues of delivery are seen to be the responsibility of the state with a consequence that natural resources suffer neglect when consumers feel that it is no longer their duty to look after their water supply. The state is perceived to be the mechanism that should protect the resource and the onus is on the state to provide clean water to its citizens. A useful way of preserving the traditional sense of responsibility for the water resources could be to integrate traditional responses to scarcity or vulnerability of the water resource into 'modern' rules and laws, and encourage development of a symbiotic relationship between modern and traditional approaches that could go a long way to fill gaps where the state is not able to act as custodian of the water resources.

An interesting example of integrating traditional norms into statutory law is provided by Section 20 of the draft South African Communal Land Rights Bill (of October 2003). Pursuant to Section 19 (2) of the Bill, the Minister (of Land Affairs) must determine the location and extent of the land to be transferred to a community. According to the Bill, this determination must include the consideration of various factors. The transfer of land rights must comply with relevant statutory legislation, including spatial planning law (Section 19 (1)) and a municipality's Integrated Development Plan (Section 19 (4). The Bill also creates land rights for women (Section 19 (4) (b)), including land rights based on "old order rights" of a male spouse, either to be held jointly with the spouse (Section 19 (4) (b) (i) or, in case of a widow of a spouse, to be held solely by such woman (Section 19 (4) (b) (ii)). According to Section 20 (2) (a) of the draft Bill, the administration and use of community land is to be regulated by community rules, in other words by customary law. Importantly, however, these community rules must be registered with the Director General of the Department of Land Affairs and comply with the requirements of the Constitution and the Communal Land Rights Act (once promulgated). If a community fails to register its rules, a standard set of rules prescribed by a Regulation of the Minister applies. Thus, the Bill provides for the management of communal land according to customary rules, but imposes certain requirements to align such customary rules with the values of the Constitution and the requirements of statutory law. Still in draft form and therefore still subject to possible amendments, the Bill could lead to synergies between customary rules and statutory law.

CONCLUSION

This profile of institutional aspects of the Limpopo Basin has highlighted a number of physical and socio-political issues. There are certain risks associated with agricultural activities in the basin. This raises several issues, including responses of local/indigenous populations to environmental changes in the short and long term. A related point is whether the changes and the adaptations, if any, vary across micro-environments and localities/groups. Are there any discernible basin-wide patterns in the changes in the physical environment and the related adaptations? Second, given that agricultural production faces uncertainty, how are livelihoods sustained in such an environment? Is it correct to talk about agriculture-based livelihoods and if so, how much contribution does agriculture make to the livelihoods? This is important since South Africa, and to an extent Zimbabwe, has been a major destination of migrant labor. It is interesting to examine whether the Basin is a net exporter or importer of labor, especially rural labor that is assumed to be available for agriculture.

Perhaps the socio-political environment has had the most dramatic impact on indigenous water management. In this respect, the rise (and sometimes fall) of civilizations, kingdoms, states and institutions are just not a historical curiosity – this has important contemporary implications. For example, the current understanding of the word 'indigenous' reflects that this notion is a construction of the interactions of political and social interactions of various groups of people and socio-political systems. What new ethnic/indigenous water management practices are under construction in the Basin today and what is the dynamic extent and nature of indigenous water management practices?

There are a number of processes that occur at the local level where change is ongoing. The exact nature and extent of the modifications/adaptations to changes in both the physical and socio-political environment are uncertain? It is also unclear to what extent indigenous water management systems have been interfered with and how much traditional practices still influence the way in which water is managed, protected or used today.

The rise of IWRM and how it relates to indigenous water practices is an important line of inquiry. IWRM is a product of international debate, but is largely untested at the local level in terms of its relevance and applicability to Africa. Local natural resource management practices are often inherently 'integrated', but the way in which this integration occurs is not yet readily well understood. This study investigates issues of boundaries and the transboundary governance systems are yet to be deciphered. One such boundary, for instance, is the boundary between conventional IWRM that promotes hydrological, rather than political-administrative boundaries and indigenous or traditional water management, largely premised on local political and social structures. Whether, and in what ways do the new boundaries promoted by principles of IWRM replace boundaries that have existed for generations and generations. What are the elements of IWRM that don't 'fit' and how do they need to be interrogated to preserve best practice advocated by traditional water management structures?

The relationship between the present State and traditional/indigenous regimes is a crucial area of inquiry given that State intervention has been more or less successful in conserving, using, managing or protecting water resources. Although the State has successfully claimed for itself the legal and administrative domain, there are spaces where state intervention is inadequate and where indigenous water management systems are far more effective. Whether or not the State is willing or able to acknowledge the interface between traditional and statutory systems of water management is another question.

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APPENDIX ONE: Overview of major historical events and trends in the Limpopo Basin

TIME PERIOD	Botswana	Mozambique	South Africa	Zimbabwe
Pre-colonial		*Up to 1880s*	*Up to 19th century*	*Up to 1890*
	- Part of present day Botswana formed part of the Great Zimbabwe state	- Zimbabwe culture extends into present-day southern Mozambique	- Bantu-speaking settlers (Zimbabwe culture) in the Mapungubwe region, remains dating back to between AD 350 and 450	- Existence of a vibrant pre-colonial Zimbabwean culture at Mapungubwe that later spread north and west
	- Evidence of farming among the Sotho; eastern Botswana inhabited by a Sotho sub-group with prowess in cattle rearing and hunting for domestic and livestock watering	- Portuguese traders arrive in the 15th century but their activities remain limited to the coastal regions	- Mapungubwe is main settlement of Zimbabwe culture from AD 1220 to 1290 before centre moves to, Great Zimbabwe (AD 1290 to 1450) and Khami near present day Bulawayo (AD 1450 to 1820). - Evidence of agricultural production in conjunction with other economic activities such as cattle raising and trade. - Arrival of first European settlers in 1652 and subsequent expansion of European settlements	- Evidence of farming communities in conjunction with other economic activities such as trade - Settlers enter the country
Colonial		*1880s to 1975*	*19th century - 1961*	*1890 – 1980*
	- Proclaimed a British Protectorate in 1885, a move opposed by some of the traditional leaders - Drilling of boreholes by colonial state, private drilling was also allowed	- Portuguese colonial rule intensifies - Establishment of formal administrative hierarchy of the Portuguese colonial empire in 1934 by the "Reforma Administrativa Ultramarina (RAU)" - establishment of "regulados" - natural resource use is governed by formal state legislation, but enforcement is weak - parallel existence of customary water management regimes likely	- Increased presence of European settlers in Limpopo Basin area - Establishment of ZAR - Increased regulation of the role of traditional leaders by British colonial government - indirect rule (later also adopted in the ZAR) - Agriculture becomes more commercialized, irrigation becomes primary water user - Water legislation primarily directed at regulating irrigation - Water needs of indigenous population widely excluded from statutory water management regimes - Promulgation of the Water Act No. 54 of 1956 with strong emphasis on riparian principle, but stronger role of state in water allocation (for non-agricultural industries)	- Settlers emphasis on water for agriculture instead of mining - Centralization of water resource management by the colonial state as evidenced by the Water Ordinance (1913) and Water Acts (1927 and 1976) - Erosion of indigenous irrigation through legal means e.g. the Natural Resources Act - Settlers enjoy better water and other rights than indigenous people

TIME PERIOD	Botswana	Mozambique	South Africa	Zimbabwe
Post-colonial		*1975 – 1990*	*1961 – 1994*	*1980 – 1992*
	- 1966: Botswana becomes an independent republic - Water Act of 1968 and the Tribal Land Act of 1970 transferred land and water administrative powers from traditional leaders - Centralized water allocation through the Water Apportionment Board - 1974: policy to build small dams for livestock watering, rights of some communities not respected	- Mozambique becomes independent (1975) - FRELIMO government aims at eliminating traditional authorities and to replace them with alternative governing structures (village secretaries, etc) - Natural resources are nationalized - Weak implementation of natural resource government legislation - Traditional structures remain strong, particularly in RENAMO - controlled areas	- Continued manipulation of traditional leadership structures and development of "homeland" policies - Consequent erosion of credibility of traditional leadership has undermined efficiency of many traditional governance regimes - Water use primarily for commercial irrigation and industrial use, indigenous population widely excluded from access to water for commercial (and domestic) use	- Periodic droughts resulting in calls for revision of Water Act
Recent		*1992 – present*	*1994 – present*	*1994 – present*
	- Efforts at 'democratizing' society is resulting in gradual marginalization of the traditional institutions in the management of natural resources - Efforts to modernize water management e.g. production of the National Water Master Plan	- End of civil war (1992) and election of first democratic government - Adoption of National Water Policy (1995), which promotes wider public participation - Attempts to integrate traditional governance regimes in overall governance framework - Decree 15/2000 recognizes the role of community authorities (including traditional leaders) in controlling natural resources - Few research results, but initial evidence of functioning customary water management regimes	- Transition to democracy with first democratic elections on 27 April 1994 - Adoption of White Paper on National Water Policy for South Africa (1997) - Promulgation of National Water Act (1998) - Abolishment of riparian principle - water becomes public good with state as custodian of water resources - Formation of Catchment Management Agencies initiated - objective: decentralized management and widespread stakeholder participation, but no explicit recognition of indigenous water management regimes	- Adoption of IWRM principles as contained in the Water Act and ZINWA Act (1998) - Formation of Catchment and Sub-Catchment Councils for water management - Attempts at decentralizing water management, but no recognition of indigenous institutions

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